1793

MARCH, 1937

COTTON

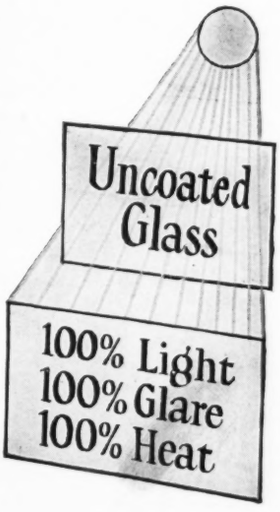
Serving the

TEXTILE INDUSTRIES

NOW SUMMER SUN CANNOT BRING HEAT, GLARE AND WORKER FATIGUE

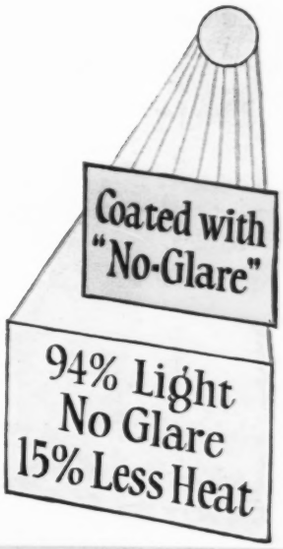
No-Glare, the window coating that scientifically filters out the heat-producing rays of the sun and diffuses the glare, is your best answer to a cooler, more efficient plant this summer. Glare is a bitter enemy of worker efficiency. It tires the eyes, dulls the mind, and makes the hand falter. Why put up with it?

No-Glare is inexpensive. A single gallon covers 750 square feet of glass. It is brushed or sprayed; is unaffected by weather; and will stay on until washed off with warm water. For $3.50 (F. O. B. Cleveland) we will send you a gallon can and guarantee satisfaction. Larger quantities at lower prices.



SKYCO NoGlare

THE SKYBRYTE CO.
CLEVELAND, OHIO



A BATCH OF BLEACH BOTTOM PINK DYED IN A STAINLESS STEEL MACHINE

A Product of Franklin Process Specialization
Cotton-covered Lastex yarns and similar products for women's girdles, waistbands, hosiery, suspenders, etc. have enjoyed a tremendous vogue in recent years. Franklin Process pioneered in the coloring of these yarns. Bleach bottom colors for these yarns, such as "flesh" and "peach" are standard in name, but usually "special" for each customer. Economies from color standardization by the trade are possible in this field.

THE REWARDS OF SPECIALIZATION

Yours as well as ours

• The automotive industry has taught us all that specialization on a few items makes for quantity production which in turn lowers costs for the manufacturer and the consumer. This company specializes in the package dyeing of yarns.

• Specialization in the job dyeing industry is not possible to the same extent as in the automotive industry because each order is an individual problem. However, by proper grouping of his orders each day, a job dyer can often create opportunities for quantity production that are not given to many smaller dyeing plants. Furthermore, the larger the job dyer, the more opportunities for such savings.

• Franklin Process has specialized in package dyeing since 1910. Last year its total production was more than 17,000,000 lbs. This tremendous output, plus the fact that we encourage our customers to select standard shades where practical, has resulted in important economies in some classes of work which we have passed on to our customers from time to time; also in superior quality that is the natural result of our unmatched experience.

• Are YOU enjoying the benefits of Franklin Process specialization and the winding economies of the Franklin Package? If you are already a customer, are you economizing by ordering STANDARD shades wherever possible?

Franklin Process

SPECIALISTS IN PACKAGE DYEING SINCE 1910

Colored Yarns *Glazed Yarns* *Custom Yarn Dyeing* *Dyeing and Processing Machines*

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • CHICAGO • N. Y. REPRESENTATIVE, 40 WORTH ST.

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga.
Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

Come to the Greenville Textile Show

and See the

Progress We Have Made

in 2 Years in Building

Better Draper Looms

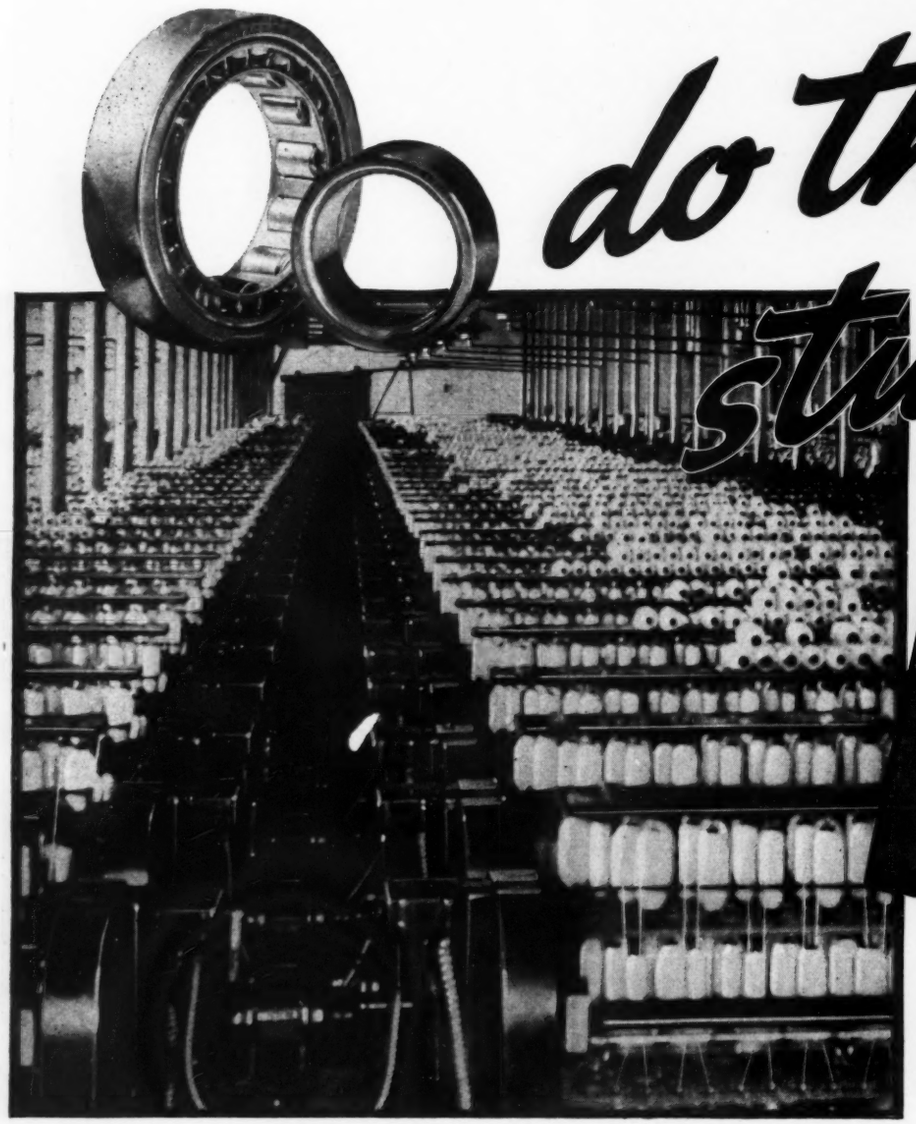
also

Improved Shuttles and Bobbins

and Spindles

DRAPER CORPORATION

Makes anti-friction bearings do their stuff!



The general efficiency of ball and roller bearings is helped by maintaining their highly-polished surfaces in prime condition . . . free from rust and corrosion. Rust, once started, condemns the bearing to destruction. Starfak stays on these surfaces to keep them like new.

YOUR anti-friction bearings are fully capable of living up to their name, but to do so, they must have a lubricant exactly suited to operating conditions. No ordinary lubricant will do. After two years of development and cooperation with bearing makers, Texaco perfected STARFAK.

Starfak is stable . . . doesn't break down, separate and leak out, but seals the bearing against foreign matter.

Starfak shows little change in consistency over wide ranges of temperature.

Starfak saves power, by providing lower starting and running torque. Developed especially for high-speed ball and roller bearings. Starfak permits them to give top performance, always. You'll see the difference almost immediately.

A Texaco representative will gladly provide practical engineering service to prove the economies of Texaco Products.

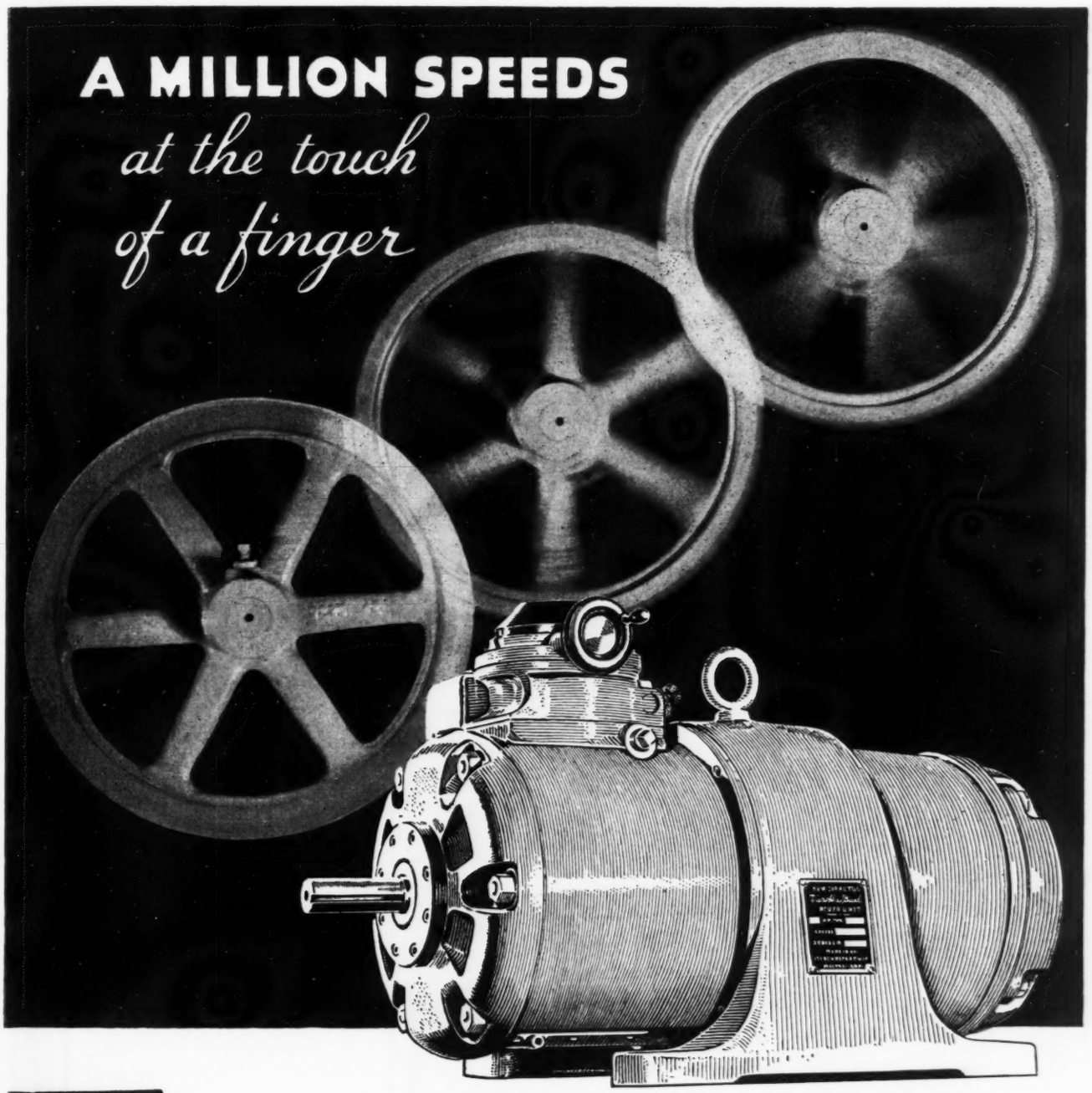
You are invited to visit THE TEXACO EXHIBIT, Booths Nos. 455 and 456 in the Annex, Textile Hall, Greenville, S. C.—Southern Textile Exposition—April 5 to 10, 1937. YOU WILL BE MADE WELCOME

TEXACO

THE TEXAS COMPANY, 135 E. 42nd St., N.Y.C. • *Nation-wide distribution facilities assure prompt delivery*

TEXACO *Industrial Lubricants*

A MILLION SPEEDS
at the touch of a finger



TRANSITORQ
TRADE MARK

Transitorq gives more than infinite speed change — more than exactly the speeds required on a job — for among all variable speed devices its EASE OF CONTROL is outstanding. No more than the merest touch of a finger on the control wheel is needed — a light, sensitive action which greatly facilitates the use of remote controls of every type. But with this marvelous ease of operation, Transitorq assures a *positive drive* — and there are no continuous wearing parts to require replacement. . . . New Departure Division General Motors Corporation, Bristol, Connecticut; Detroit, Chicago and San Francisco.

NEW DEPARTURE
Variable Speed
TRANSITORQ

2522-P

It's PRECIOUS LIQUOR *to Jim Lester*

•

THERE'S more to Jim Lester's job in Mathieson's plant at Saltville, Virginia, than just filling liquid caustic tank cars. His is the task not only to see that cars are properly filled, but to make sure that each car interior is clean and free from defects before filling, that pipe lines, valves, pumps are all in perfect condition. On him rests a goodly share of the responsibility for the uniform purity of Mathieson Liquid Caustic when it arrives at your plant.

One reason Jim Lester carries this responsibility so well is his frank respect for the quality of Mathieson Caustic. Throughout the eleven years he has worked at Saltville, this man has watched his company steadily improve its processes, has seen it lead time and again in producing caustic which set new standards for purity and uniformity. With such a background, it is no wonder Jim Lester regards the product in his care as "precious liquor"—no wonder that, like all of the men behind Mathieson Chemicals, he spares no pains to deliver you a dependable product of uniform, outstanding purity.

The MATHIESON ALKALI WORKS *(Inc.)*
60 East 42nd Street New York, N. Y.

Send for free 72-page book, "Cutting Costs with Liquid Caustic Soda."

Mathieson Chemicals

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH AND HTH-15 . . . AMMONIA, ANHYDROUS AND AQUA . . . PH-PLUS (FUSED ALKALI) . . . SULPHUR CHLORIDE . . . CCH (INDUSTRIAL HYPOCHLORITE) . . . DRY ICE (CARBON DIOXIDE ICE)

BASE YOUR DECISION ON *performance*

When contemplating a change of your present Roving or Spinning Frames, or the addition of new Frames, consider performance before making a decision on which system you will purchase.

Roving and Spinning Frames equipped by Whitin for better drafting will produce consistently more even roving, stronger and more even and smoother yarns, with less ends down, less waste, and at a lower unit cost for cleaning.

Every mill test we have made during the period of greatest demand for such equipment since long draft was developed has borne out this statement.

It is pleasing to us to know that we have not lost a single order based on tests made between competing systems, so far as we can determine, over the last year and a half.

You are safe in basing your final decision on the performance record of the Whitin-Casablancas Systems, for Roving and Spinning Frames.

BUY ON *performance*

WHITIN MACHINE WORKS

CHARLOTTE, N. C. WHITINSVILLE, MASS. ATLANTA, GA.

YOU CAN DO IT BETTER WITH A FIFTY-TWO-EIGHT...

FOR ATTACHING CUFFS, SPLIT-TUBE BORDERS, KNITTED TUBING, LACE AND GENERAL SEAMING WORK....

● *Style 52800 B* — A three needle machine (illustrated at right) for attaching cuffs to union suits, etc. It produces the one operation lap seam Type FSa-1 with the five-thread interlock stitch, Type 605. Features off-set differential feed and most efficient type edge guides.

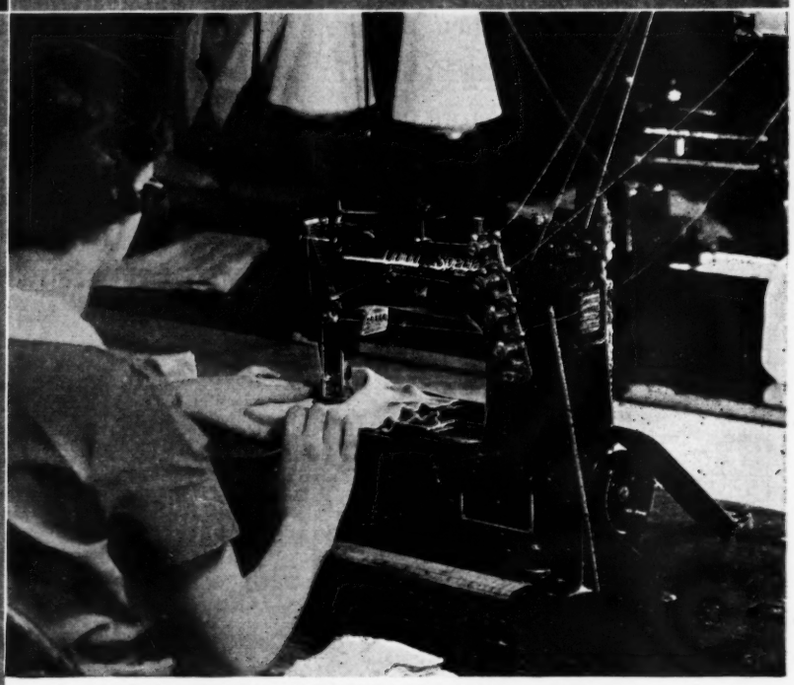
● *Style 52800 D*—For general, heavy and medium weight seaming. It has the tandem differential feed and a three-section bottom presser foot. Otherwise, same as Style 52800 B.

● *Style 52800 E*—A two-needle machine (illustrated above) for attaching split-tube borders to necks and armholes of athletic shirts, and for making built-up shoulder straps. The construction of the feed dog, throat plate and presser foot, together with the intermittent strip tension insure a well shaped neck with a better appearing stitch.

● *Style 52800 F*—Similar to Style 52800 E but intended more as an all-purpose machine. Attaches split-tube borders in finished widths of ½", ⅝", ¾" and 1".

● *Style 52800 G*—A two-needle machine especially well suited for attaching lace or knitted tubing.

NOTE—All of the above machines are readily convertible from one style to another as rapidly as fashions or demands change. Detailed literature on request.



Union Special's New High Speed

KNIT GOODS MACHINE!

This is the new Union Special—that supersedes the famous *Class 5100* and *Class 13100* machines used so universally throughout the knit goods industry.

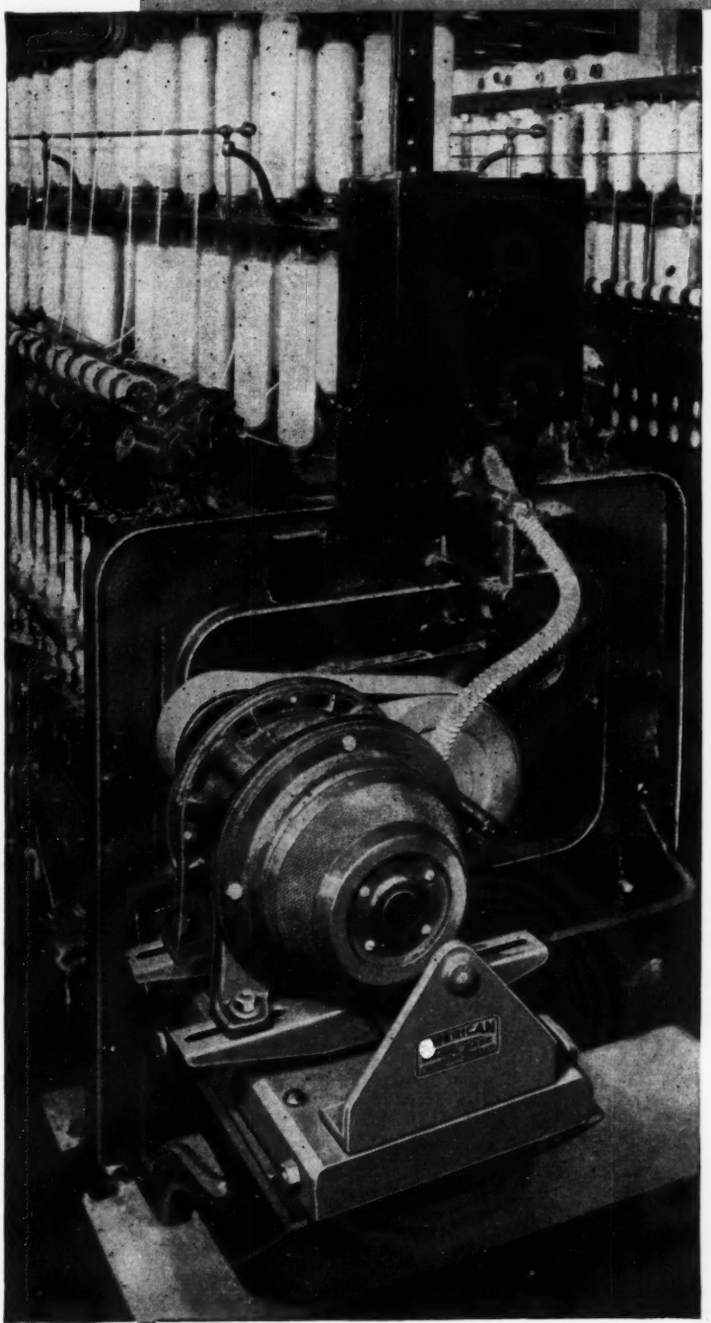
Already widely adopted as standard equipment, *Class 52800* machines have demonstrated their ability to increase production as much as 35% over *Class 5100* and as much as 18% over *Class 13100.*

Write for samples of work.

UNION SPECIAL MACHINE CO.

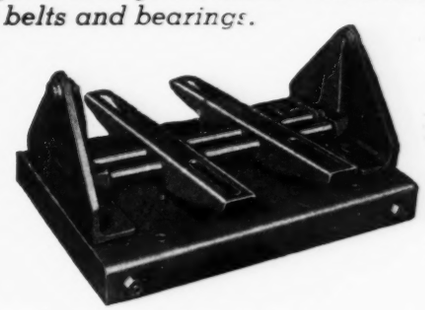
400 North Franklin Street Chicago, Illinois

Belt Tension Should *NEVER* Be Constant



Control it*—AUTOMATICALLY *to meet load requirements and you've found the Key to maintenance economies

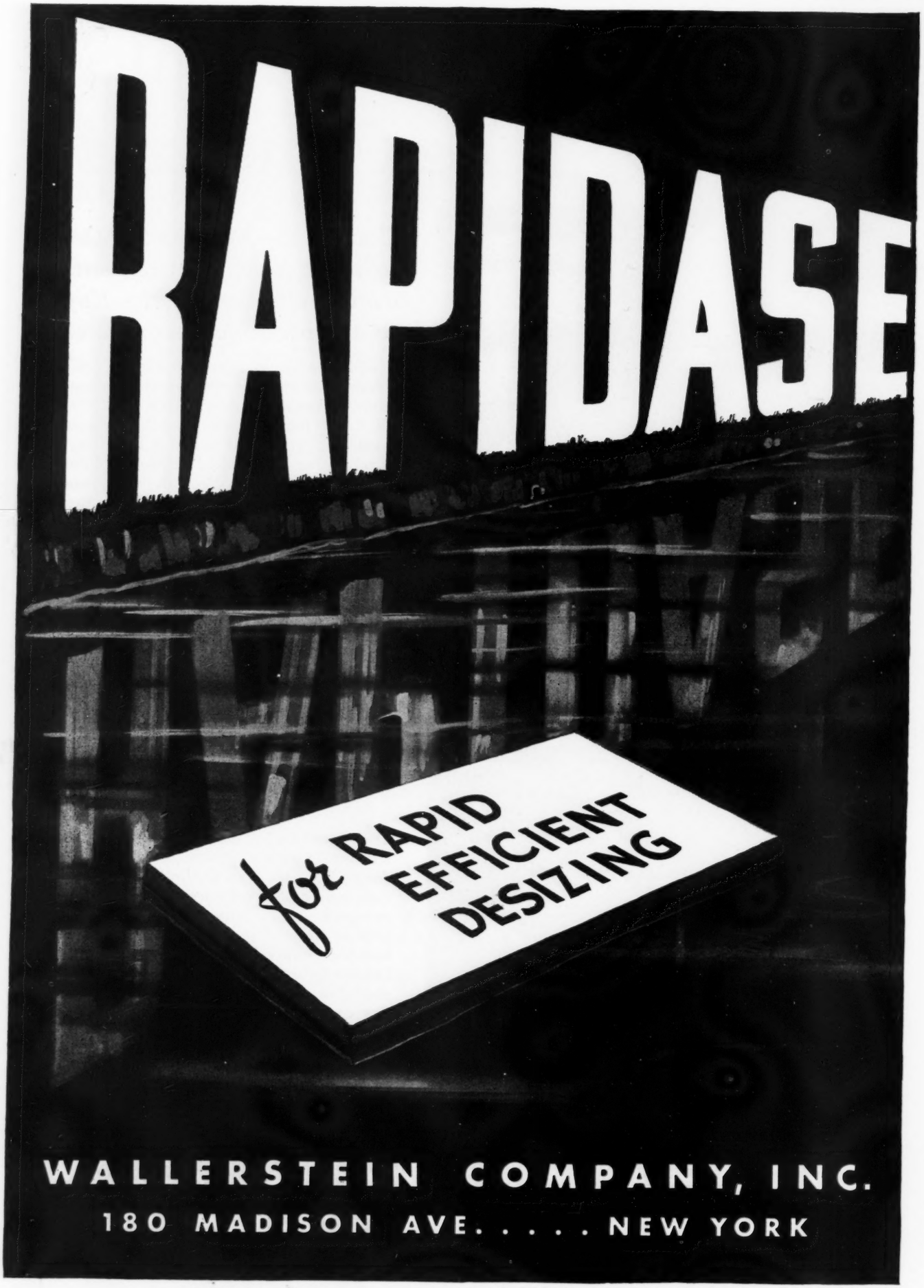
If mill men could control formulas, yarn weights and textures, weaves, etc., as positively and easily as they CAN NOW CONTROL belt tension throughout their plants, textile experts would heave a great sigh of relief. For the age-old problems of belt tension control have been definitely and finally "licked". Operators all know that starting and other peak loads require high belt tension on any drive. But constant tension that will handle these peaks is too high for average conditions—and *ruinous to belts and bearings.*



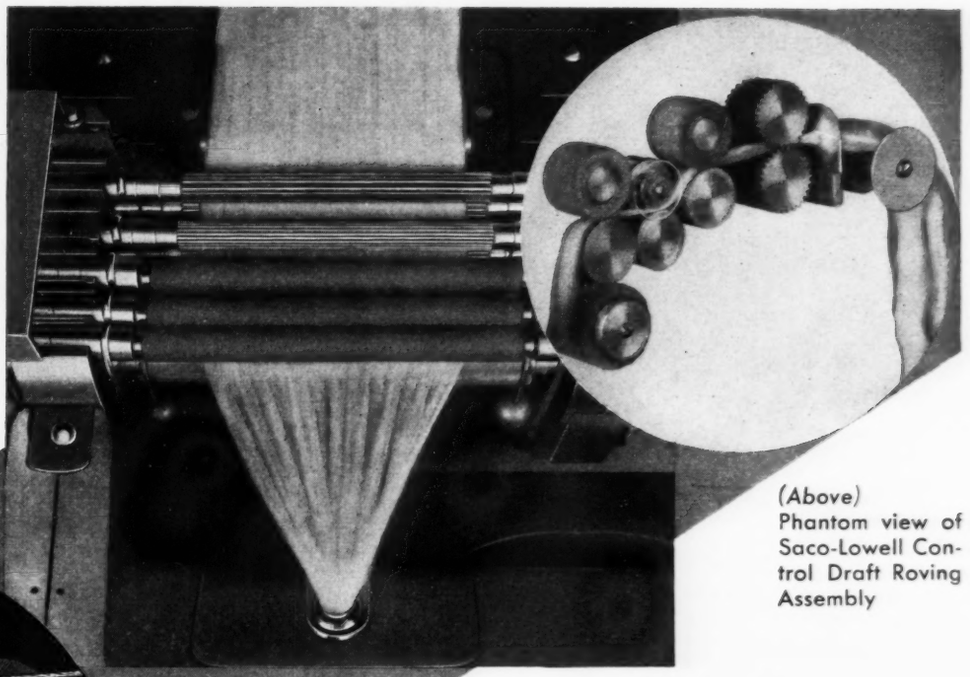
The American Tension Control Motor Base *automatically matches belt tension to load.* No other type of short center drive can match it in efficiency and outright economy. Appreciable savings are accomplished through increased belt and bearing life, reduced power consumption and longer intervals between replacement shut-downs wherever this base is installed. Try an American Tension Control Motor Base in your mill. We will gladly send one on approval so that you can demonstrate its matchless efficiency and savings.

THE AMERICAN PULLEY COMPANY
4200 WISSAHICKON AVENUE
PHILADELPHIA, PA.

AMERICAN
Tension Control
MOTOR BASE

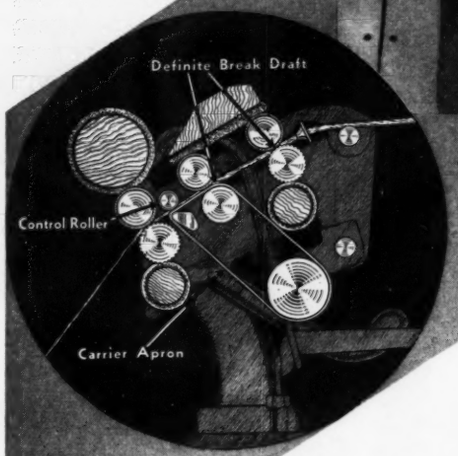

RAPIDASE
for RAPID EFFICIENT DESIZING
WALLERSTEIN COMPANY, INC.
180 MADISON AVE. . . . . NEW YORK

(Right)
Looking down on the Saco-Lowell Controlled Draft Drawing Frame



(Above)
Phantom view of Saco-Lowell Control Draft Roving Assembly

(Below)
Cross section view of Saco-Lowell Roth Better Drafting System



Accurate and Efficient
FIBRE CONTROL

. . is absolutely assured in the new Saco-Lowell Card Room and Spinning Room Drafting Systems

Starting with the Drawing Frame, continuing through the Roving, and finally in the Spinning the fibre is under definite control at the critical drafting periods. This is why yarns prepared on Saco-Lowell modern equipment are generally more even and stronger . . . and always less expensive to manufacture — frequently 33⅓% less.

Mills can save money by spinning all counts and character of yarns on this advanced equipment.

• PROFIT BY MODERNIZING •

SACO-LOWELL SHOPS, 147 Milk Street, Boston, Mass.

C&K PRE

Six interesting new looms. Selected because of their newness and their importance to the Southern market. Five are of the C type and one is an S3 Shuttle Changer.

C4
Convertible Loom

68", 25 harness dobby, 4 x 1 box bobbin changer or 4 x 4 box non-automatic.

Running bobbin $8\frac{3}{4}$" x $1\frac{1}{4}$" —can be made to take $1\frac{3}{8}$".

Weaving Upholstery Material

Two ply 20's cotton warp.

2.50 hank roving with two ply 30's twist for filling.

Speed—143 picks per minute.

C4
Bedspread Loom

98", 20 harness, $\frac{15}{32}$" gauge dobby, 4 x 1 box bobbin changer.

Running bobbin $8\frac{3}{4}$" x $1\frac{3}{8}$".

Weaving Cotton Bedspread

Two ply 20's warp and filling.

Speed—121 picks per minute.

C5
Cotton Suiting Loom

46", 20 harness dobby, 4 x 1 box bobbin changer.

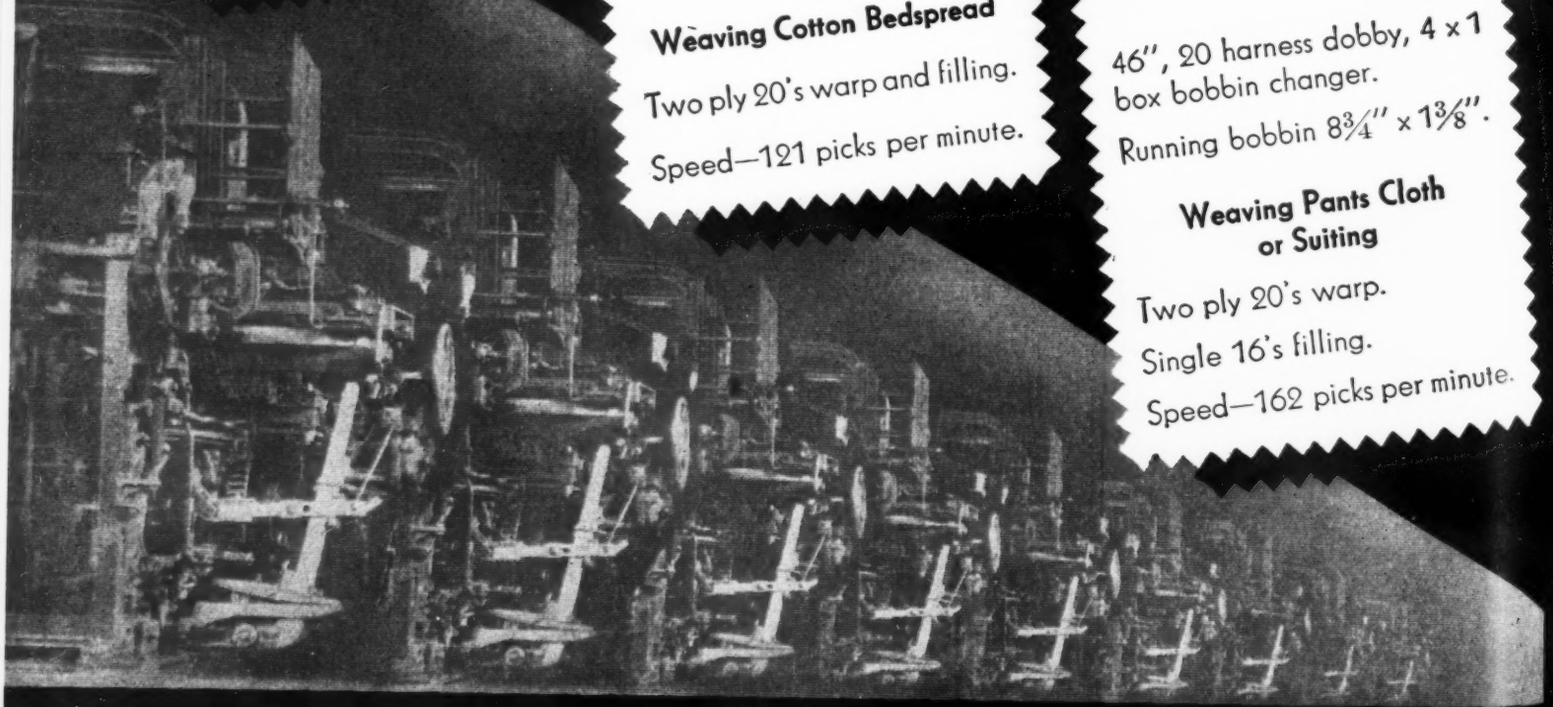
Running bobbin $8\frac{3}{4}$" x $1\frac{3}{8}$".

Weaving Pants Cloth or Suiting

Two ply 20's warp.

Single 16's filling.

Speed—162 picks per minute.



CROMPTON & KNOWLES

ALLENTOWN, PA. PHILADELPHIA, PA. CHARLOTTE, N. CAR.

SENTS:

Descriptions will be found below. A cordial welcome awaits you in Booth 126 at the

SOUTHERN TEXTILE SHOW

GREENVILLE, S. C. - - - APRIL 5 TO 10

S3
Under Cam Loom

52", 6 harness, 2 x 1 box shuttle changer.

Running shuttle $16\frac{1}{2}'' \times 1\frac{15}{16}'' \times 1\frac{1}{4}'' \times 1\frac{1}{16}''$.

Weaving Acetate Canton Crepe

150 Denier Acetate Warp

150 Denier Viscose Filling

Speed—152 picks per minute.

C3
Huck Towel Loom

33", 16 harness dobby, 2 x 1 box bobbin changer.

Running bobbin $8\frac{3}{4}'' \times 1\frac{5}{8}''$.

Weaving Huck Toweling

Single 16's warp.

Single 14's filling.

Speed—182 picks per minute.

C3
Terry Towel Loom

40", 16 harness dobby, 4 x 1 box bobbin changer.

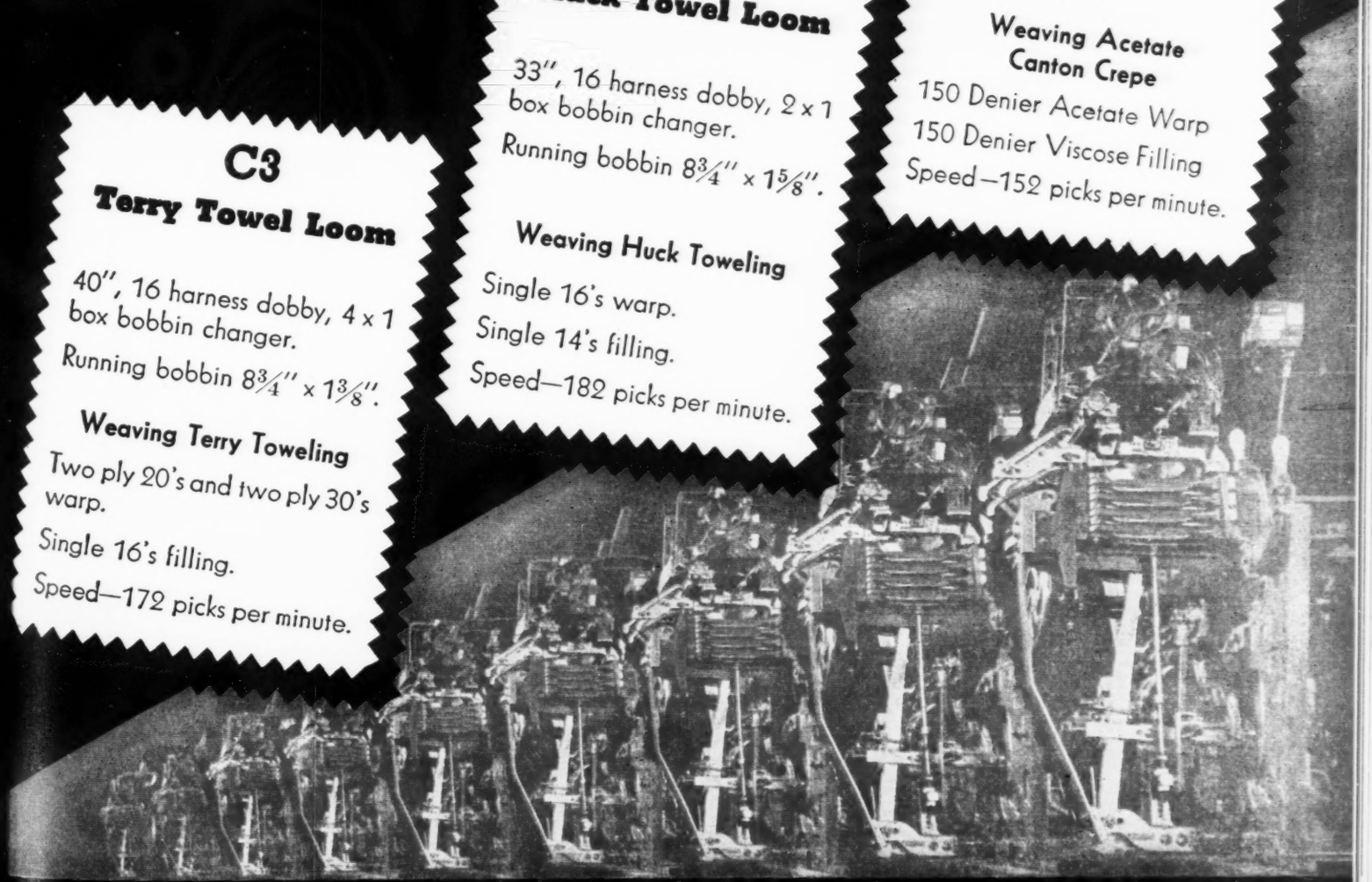
Running bobbin $8\frac{3}{4}'' \times 1\frac{3}{8}''$.

Weaving Terry Toweling

Two ply 20's and two ply 30's warp.

Single 16's filling.

Speed—172 picks per minute.

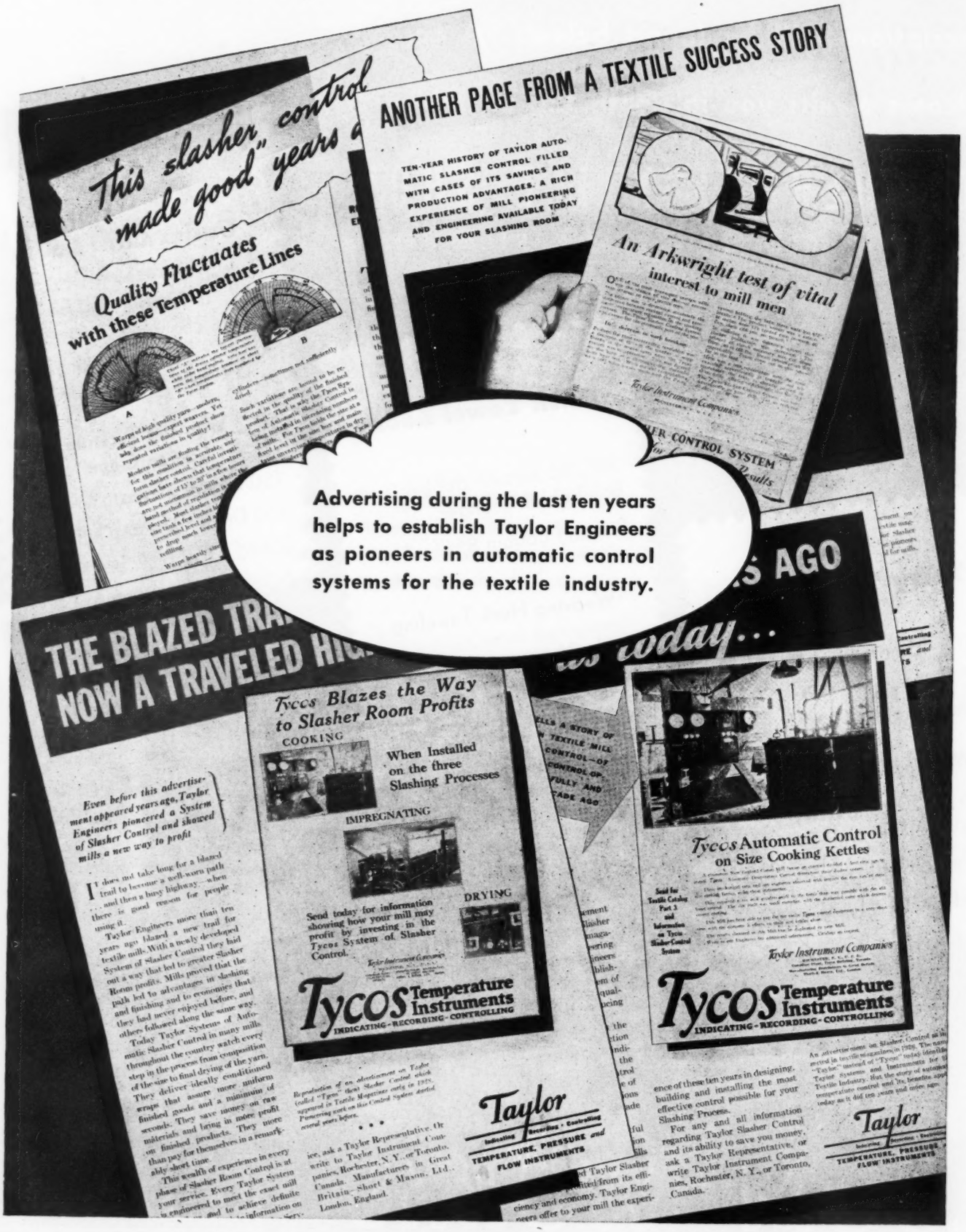


LOOM WORKS

* WORCESTER *
MASSACHUSETTS

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

A QUICK LOOK BACK—


"This slasher control made good" years a
Quality Fluctuates with these Temperature Lines
ANOTHER PAGE FROM A TEXTILE SUCCESS STORY
TEN-YEAR HISTORY OF TAYLOR AUTOMATIC SLASHER CONTROL FILLED WITH CASES OF ITS SAVINGS AND PRODUCTION ADVANTAGES. A RICH EXPERIENCE OF MILL PIONEERING AND ENGINEERING AVAILABLE TODAY FOR YOUR SLASHING ROOM
An Arkwright test of vital interest to mill men
Taylor Instrument Companies
Advertising during the last ten years helps to establish Taylor Engineers as pioneers in automatic control systems for the textile industry.
THE BLAZED TRA
NOW A TRAVELED HIG
S AGO
today...
Even before this advertisement appeared years ago, Taylor Engineers pioneered a System of Slasher Control and showed mills a new way to profit
Tycos Blazes the Way to Slasher Room Profits
COOKING
When Installed on the three Slashing Processes
IMPREGNATING
DRYING
Send today for information showing how your mill may profit by investing in the Tycos System of Slasher Control.
Taylor Instrument Companies
TYCOS Temperature Instruments
INDICATING - RECORDING - CONTROLLING
Taylor
Indicating Recording Controlling
TEMPERATURE, PRESSURE and FLOW INSTRUMENTS
Tycos Automatic Control on Size Cooking Kettles
Send for Textile Catalog Part 3 and Information on Tycos Slasher Control System
Taylor Instrument Companies
TYCOS Temperature Instruments
INDICATING - RECORDING - CONTROLLING
Taylor
TEMPERATURE, PRESSURE FLOW INSTRUMENTS

A PROMISE OF REWARD

for Mills Today and Tomorrow

LET TAYLOR SYSTEMS OF TEMPERATURE, PRESSURE AND HUMIDITY CONTROL HELP YOU SAVE MONEY AND GUARD PRODUCT QUALITY FROM NOW ON

MORE than ten years ago, Taylor Engineers pioneered in designing, making and installing automatic Temperature Control in Slasher Rooms. Today, a great wealth of experience is at your disposal in coordinating every step in the slashing process by means of Taylor Instruments engineered to meet your mill's special requirements.

But Taylor offers more than that highly specialized service today. Wherever uniformity of quality and production economy depend on accurate, close control of temperature, pressure and humidity—from slashing to finishing—Taylor Systems of Control can serve you. Taylor engineers consider a control problem on the basis of specific results to be obtained in terms of mill output and costs. They aim to prove the dollar and cents value of every Taylor installation that is made.

With Slasher Control, for example, they work to make warps run more smoothly and decrease warp breakage; to reduce loom stoppages, increase production speed, and cut down steam consumption; to reduce shedding and save cotton; to increase weave-room efficiency and produce uniform finished goods at lower cost.

Other Taylor Systems designed for textile mills are Kier Control, the Mercerizer Control, the Steam-Heated Calender Control, Enzyme-Type Desizing Control, Starch Back-Filling Preparation Control, the Soaper Control, the Conveyor-Type Drier Control, Wool-Scouring and Stock-Drying Control.

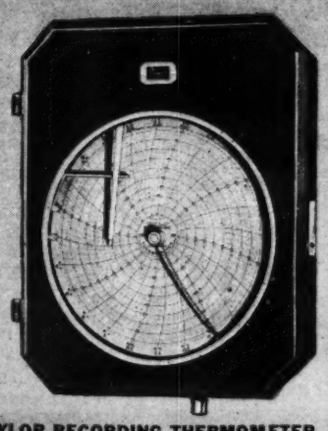
Let Taylor Engineers help you determine whether temperature pressure and humidity control can be used to greater advantage. For detailed information on all Taylor Control Systems, ask a Taylor Representative or write Taylor Instrument Company, Rochester, N. Y. Plant in Toronto, Canada. Manufacturers in Great Britain—Short & Mason, Ltd., London, Eng.

Taylor

Indicating Recording Controlling

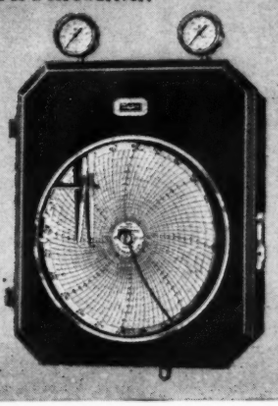
TEMPERATURE, PRESSURE *and* FLOW INSTRUMENTS

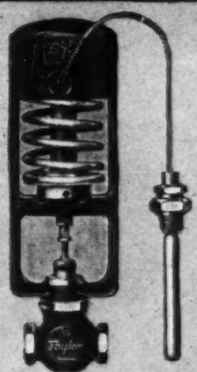
THESE INSTRUMENTS ARE VITAL PARTS OF TAYLOR CONTROL SYSTEMS. WRITE FOR SPECIAL BULLETINS DESCRIBING EACH.



TAYLOR RECORDING THERMOMETER. Every variation of temperature is automatically charted on this modern instrument, providing a check on apparatus and employee efficiency.

TAYLOR "FULSCOPE" RECORDING CONTROLLER. As accurate and durable an instrument as you can find today for maintaining automatically temperature, pressure, rate of flow or liquid level. An exclusive Taylor development, the Universal Sensitivity Adjuster, gives a wide range of control at the turn of a screwdriver.





TAYLOR SELF-ACTING TEMPERATURE CONTROLLER. Designed for use where compressed air is not available, where expense of an air-compressor is not warranted and where control within very close limits is not so vital. Has quick response and a wide variety of uses.

They Sawed the Eyes with threads to learn how SMOOTH they were

Certified STEEL HEDDLES manufactured by a process insuring smoothness of eye, long wear, high tensile strength, durability and corrosion resistance of plating. Heddles purchased in open market are examined and tested periodically by
PITTSBURGH TESTING LABORATORY
as an independent check upon Emmons' standards of manufacturing control
EMMONS LOOM HARNESS COMPANY
LAWRENCE, MASSACHUSETTS

Laboratory Tests Show Emmons "Certified" Steel Heddles Are Easy on the Yarn

Emmons now goes to an outside testing laboratory to make sure that its manufacturing equipment is always turning out steel heddles of uniformly high quality — promising weavers freedom from chafing and warp breaks.

Test: Emmons "Certified" heddles were mounted at a 30° angle on a wooden frame. No. 50 threads were wound around a drum and passed through the heddle eyes. Each thread had a 5-ounce weight attached to it — and each thread was sawed back and forth through the heddle eye (a constant scraping of 5½ inches each time) until it broke.

Here is an astonishing record. The heddles were picked at random *in the open market* — yet little variation was found in the smoothness of the heddle eyes! Even this variation might be due to the thread.

Number of Times Thread Passed Through Eye Under Tension

Heddle 1	226
Heddle 2	290
Heddle 3	269
Heddle 4	200

Emmons will continue to have its heddles tested periodically by the Pittsburgh Testing Laboratory as an independent check upon Emmons' standards of manufacturing quality. Future P. T. L. reports will be reported in this magazine.

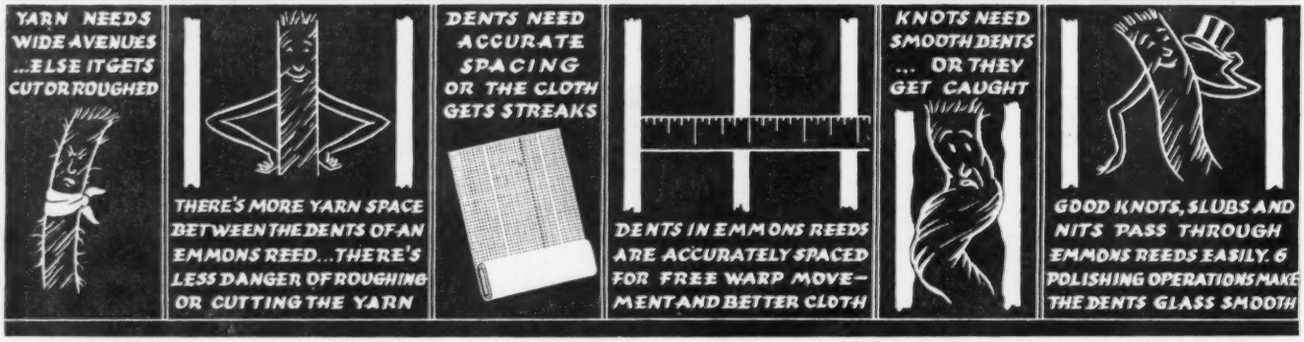
Be sure you order the steel heddles with the "CERTIFIED" tag!

Emmons

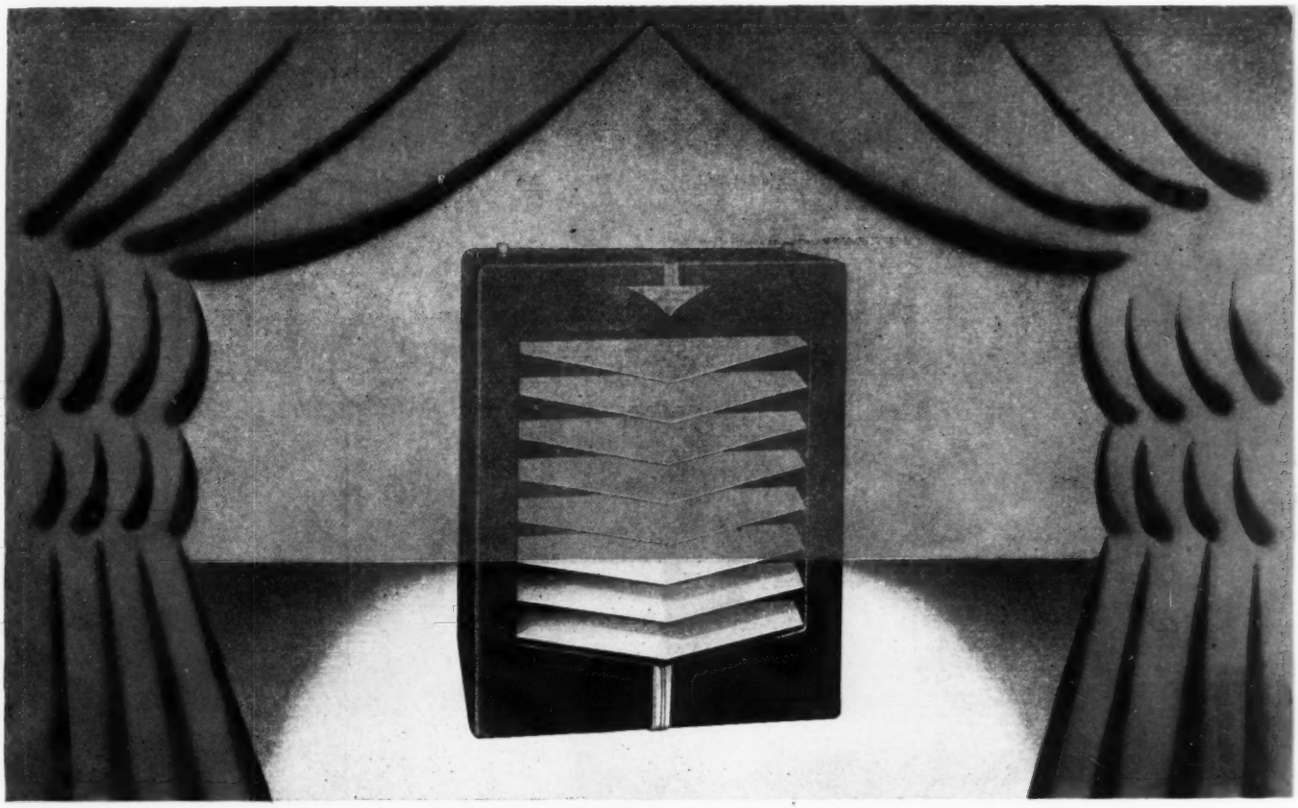
"CERTIFIED" STEEL HEDDLES

EMMONS LOOMS HARNESS CO., LAWRENCE, MASS.

STORY ABOUT "MULTIPLIED YARN SPACE" REEDS


YARN NEEDS WIDE AVENUES ...ELSE IT GETS CUT OR ROUGHED
THERE'S MORE YARN SPACE BETWEEN THE DENTS OF AN EMMONS REED...THERE'S LESS DANGER OF ROUGHING OR CUTTING THE YARN
DENTS NEED ACCURATE SPACING OR THE CLOTH GETS STREAKS
DENTS IN EMMONS REEDS ARE ACCURATELY SPACED FOR FREE WARP MOVEMENT AND BETTER CLOTH
KNOTS NEED SMOOTH DENTS ... OR THEY GET CAUGHT
GOOD KNOTS, SLUBS AND NITS PASS THROUGH EMMONS REEDS EASILY. 6 POLISHING OPERATIONS MAKE THE DENTS GLASS SMOOTH

"CERTIFIED" STEEL HEDDLES, "MULTIPLIED YARN SPACE" REEDS, "CHAFELESS CORD" COTTON HARNESS described in Textile World Yearbook



Coming...a THERMOLIER *de luxe type*

ITS MODERN LINES ARE GEARED TO 1937 . . . ITS HANDSOME FINISH WILL MAKE IT WELCOME IN THE SMARTEST STORE, THE FINEST OFFICE . . . ITS DESIGN ASSURES EVEN BETTER DISTRIBUTION OF HEAT . . .

FACTORY TYPE

Available with steel housing, gray Duco finish. For use where appearance is not of paramount importance.

To the outstanding line of Factory and Industrial Type Thermoliers, Grinnell announces the addition of a De Luxe Thermolier, soon to go into production.

The Thermolier De Luxe Type has the same dependable heat unit with all 14 points of superiority of present Thermoliers, *plus* decorative appearance, *plus* even better distribution of heat.

Full details on the Thermolier De Luxe Type will be available soon. If you're planning the purchase of unit heaters, where smart, modern appearance and a better, quieter distribution of heat are paramount, you'll find it worth while to wait until this Thermolier is out.

GRINNELL COMPANY
EXECUTIVE OFFICES PROVIDENCE, R. I.
Branch Offices in Principal Cities

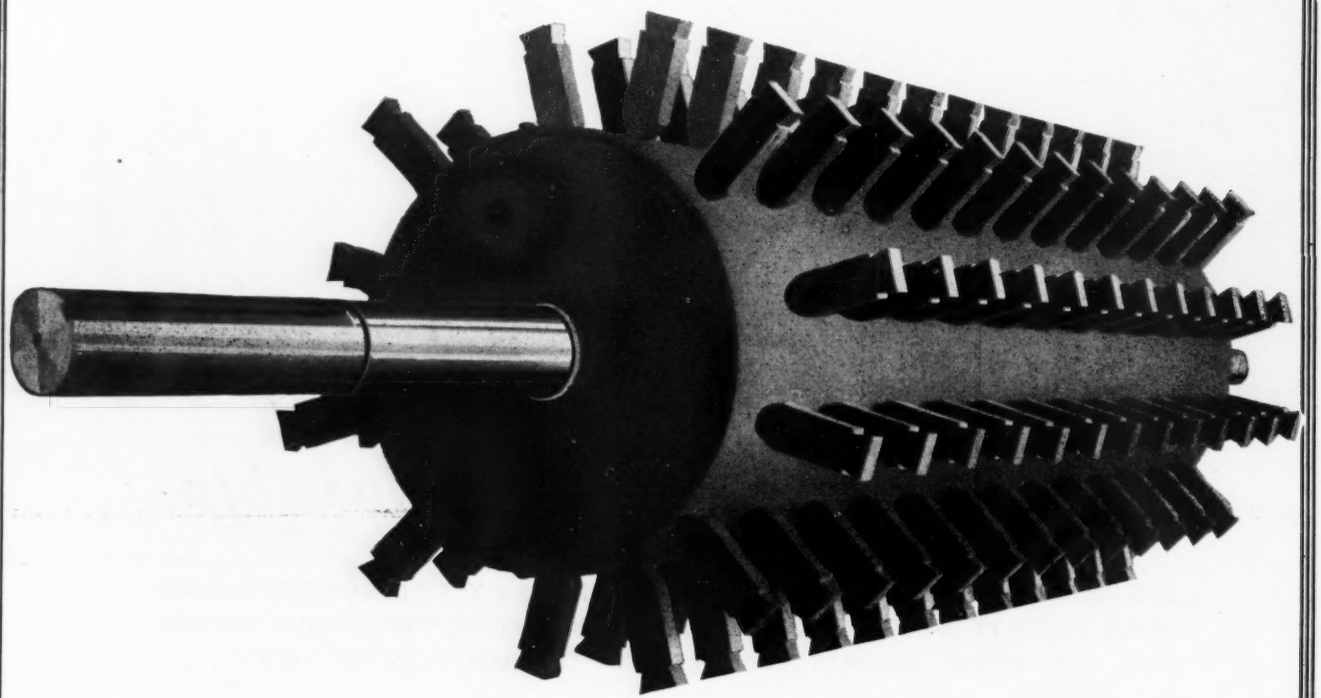
INDUSTRIAL TYPE

Available with polished copper or chrome-plated housing. Suitable for use in mercantile buildings, manufacturing plants and offices, and other places where better appearance is desired.

GRINNELL THERMOLIER

THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

THE ALDRICH MULTI-BLADE CYLINDER BEATER



Specially designed for use in the breaker sections of Single Process Pickers

The **Multi-Blade Cylinder Beater** cleans cotton better than ordinary beaters and breaks up less foreign matter.

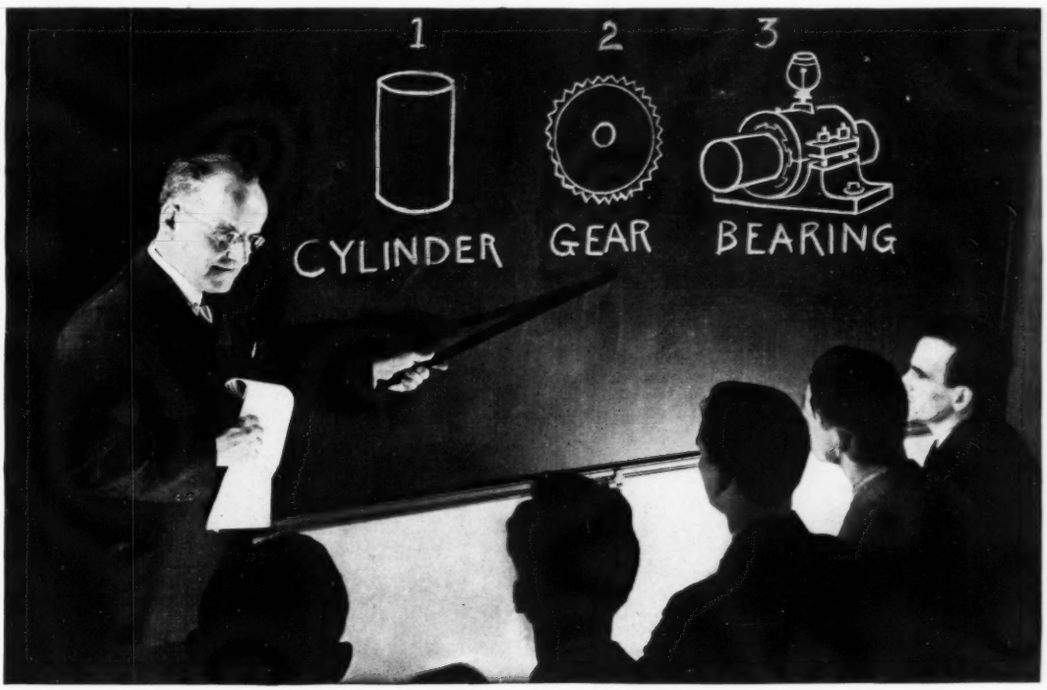
The finished laps are therefore freer from speck and nips; will card better and make cleaner yarn.

AldricH MachinE

Greenwood, WorkS South Carolina

"HALF A MILLION COMBINATIONS OF THESE—

It is Socony-Vacuum's job...through its Engineering Service... to provide 'Correct Lubrication' for 500,000 different applications of bearings...gears...cylinders."



What this Exclusive Service can do for your Plant:

1. Curb losses that boost power consumption and costs.
2. Decrease maintenance—eliminate unnecessary repair bills.
3. Improve production results by greater machine efficiency.
4. Lower lubrication costs.
5. Help your men find ways to devise important economies.

IT TAKES A GREAT, highly trained organization to keep fully up to date on half a million different varieties of vital mechanisms. That's been the job of the makers of Gargoyle Lubricants for the past 71 years.

Hundreds of thousands of industrial men . . . executives, plant managers, machine hands . . . find that this exclusive element of Socony-Vacuum's Service to Industry helps to make plant operations profitable.

TAKE JUST a few minutes to talk with a Socony-Vacuum representative . . . let our experience work among your capable plant men.

SOCONY-VACUUM

INDUSTRIAL LUBRICATION

GARGOYLE Lubricants

SAVES MONEY FOR INDUSTRY

Read what 71 Years' Lubricating Experience...the Greatest in the Oil Business...can do for You. See Next Page.

1 Careful selection of the right kind of lubricants for all types of power and production equipment... curbing losses and waste of power generated or purchased.

2 Proper methods of application... the right oil in the right amount ...aiding higher machine speeds... minimizing spoilage or rejects...protecting capital invested in machinery.

THE SUM OF THESE FOUR SAVINGS

1. REDUCED POWER CONSUMPTION
2. MORE CONTINUOUS PRODUCTION
3. DECREASED MAINTENANCE
4. LOWER LUBRICATION COSTS

4 = CORRECT LUBRICATION

3 Experience in dealing with individual operating conditions... correction of out-dated practices often resulting in excessive repair and replacement costs.

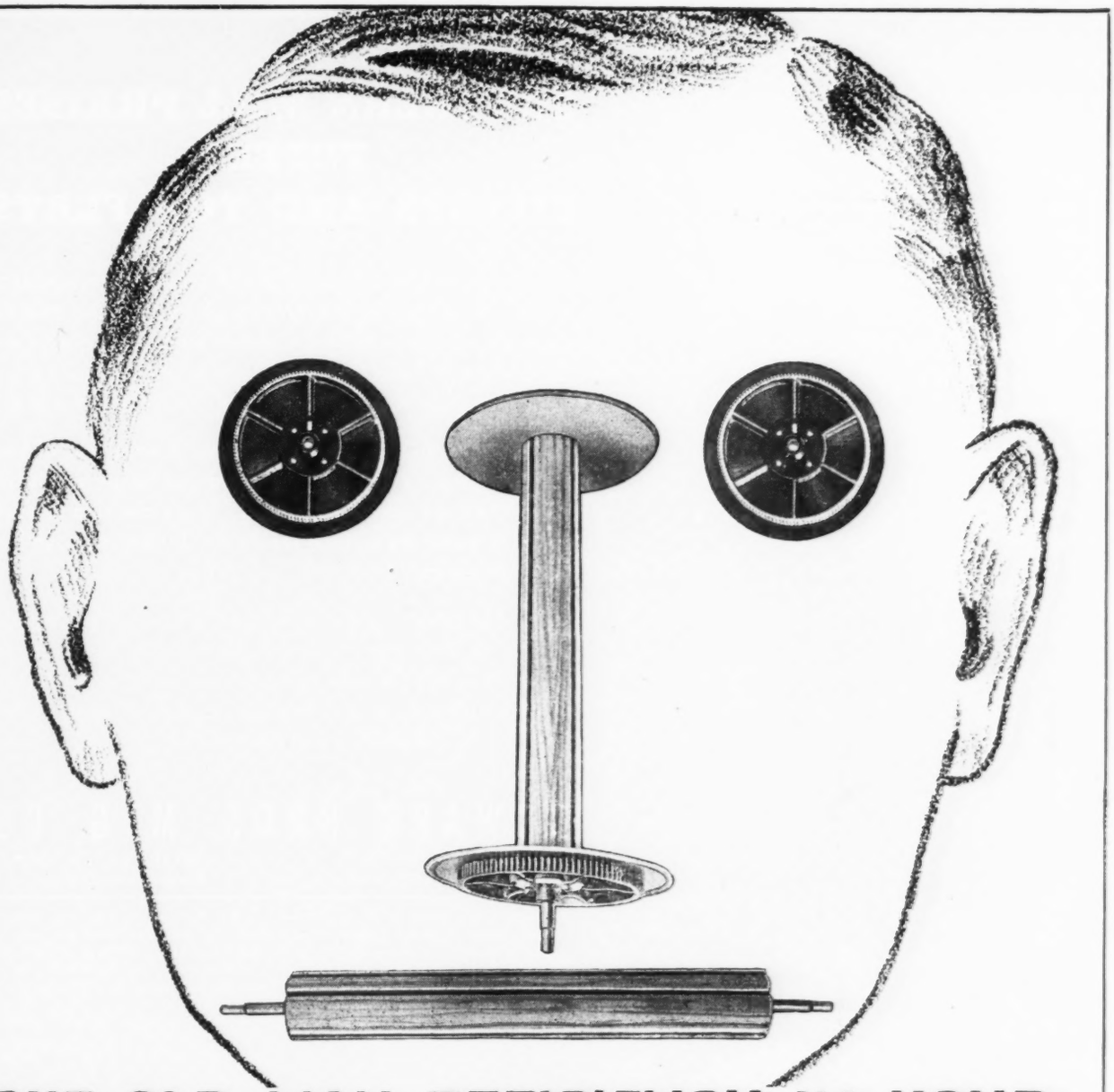
4 A planned lubrication program ...quality lubricants where necessary...other lubricants where their use will provide economy and not handicap machine efficiency.

SOCONY-VACUUM OIL CO.

INCORPORATED

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION
WADHAMS OIL COMPANY · MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

GARGOYLE Lubricants



PUT OLD MAN EFFICIENCY IN YOUR WEAVE ROOM - *with West Point Loom Beams*

You can put this expert to work in your plant and definitely increase the efficiency of your looms with West Point Loom Beams. High and low places are eliminated on edge of warp, and consequent bad selvage.

The barrels of West Point beams are made of thoroughly seasoned wood and the journals are of tough plow steel. All are turned to exact size and length. Our beam barrels may be fitted with either our high tensile strength cast iron or Etchison patented steel heads.

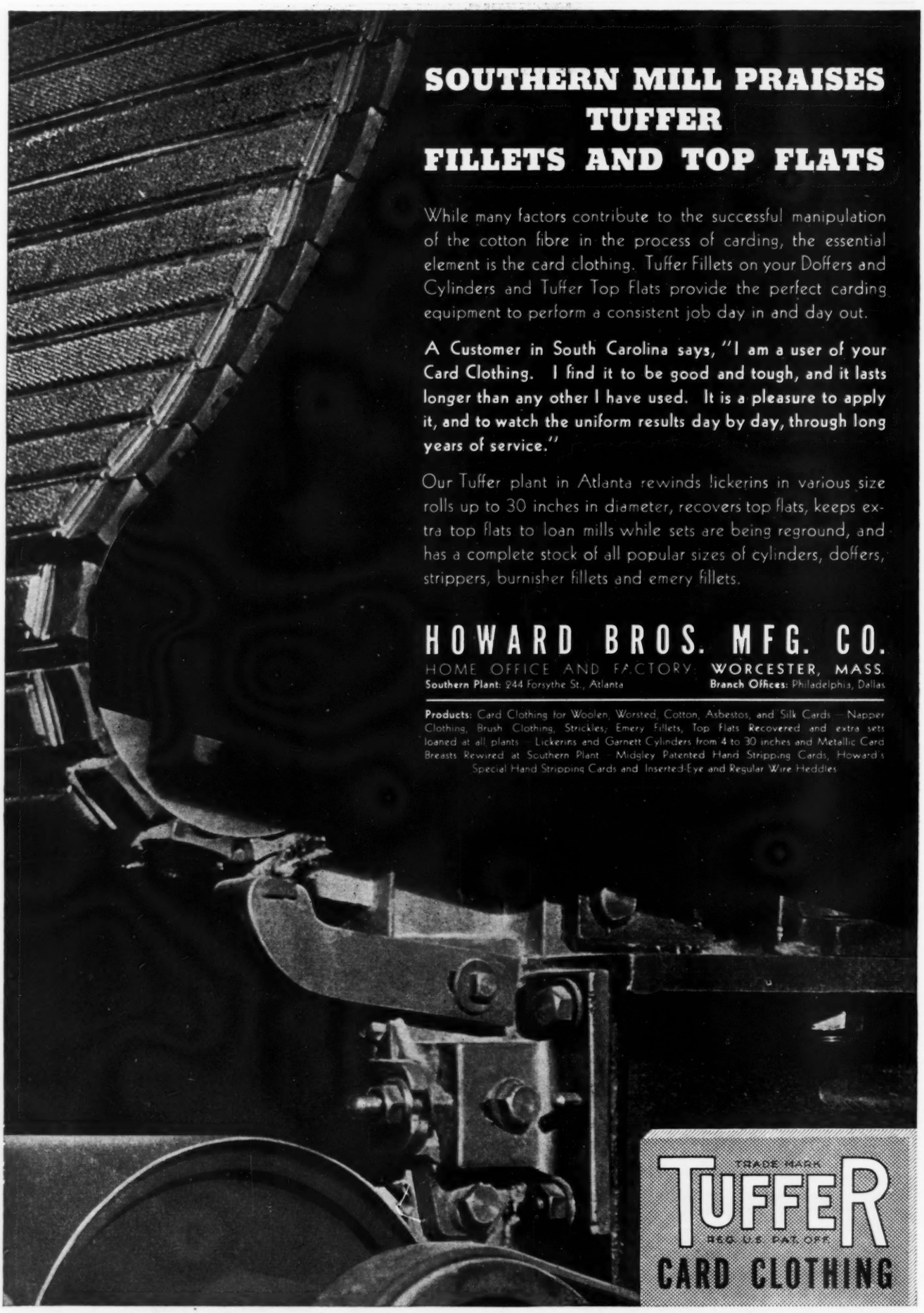
We particularly recommend Etchison steel heads because they act as a shield and protect the gears. They are practically indestructible. They cost more than the cast iron heads but are worth the difference, and those mills which are using them will attest to this fact.

• *Also manufacturers of special machinery, cloth room machinery, textile machinery repair parts, bobbin gears, spur and bevel gears in iron, steel and brass.*

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA



SOUTHERN MILL PRAISES TUFFER FILLETS AND TOP FLATS

While many factors contribute to the successful manipulation of the cotton fibre in the process of carding, the essential element is the card clothing. Tuffer Fillets on your Doffers and Cylinders and Tuffer Top Flats provide the perfect carding equipment to perform a consistent job day in and day out.

A Customer in South Carolina says, "I am a user of your Card Clothing. I find it to be good and tough, and it lasts longer than any other I have used. It is a pleasure to apply it, and to watch the uniform results day by day, through long years of service."

Our Tuffer plant in Atlanta rewinds lickerins in various size rolls up to 30 inches in diameter, recovers top flats, keeps extra top flats to loan mills while sets are being reground, and has a complete stock of all popular sizes of cylinders, doffers, strippers, burnisher fillets and emery fillets.

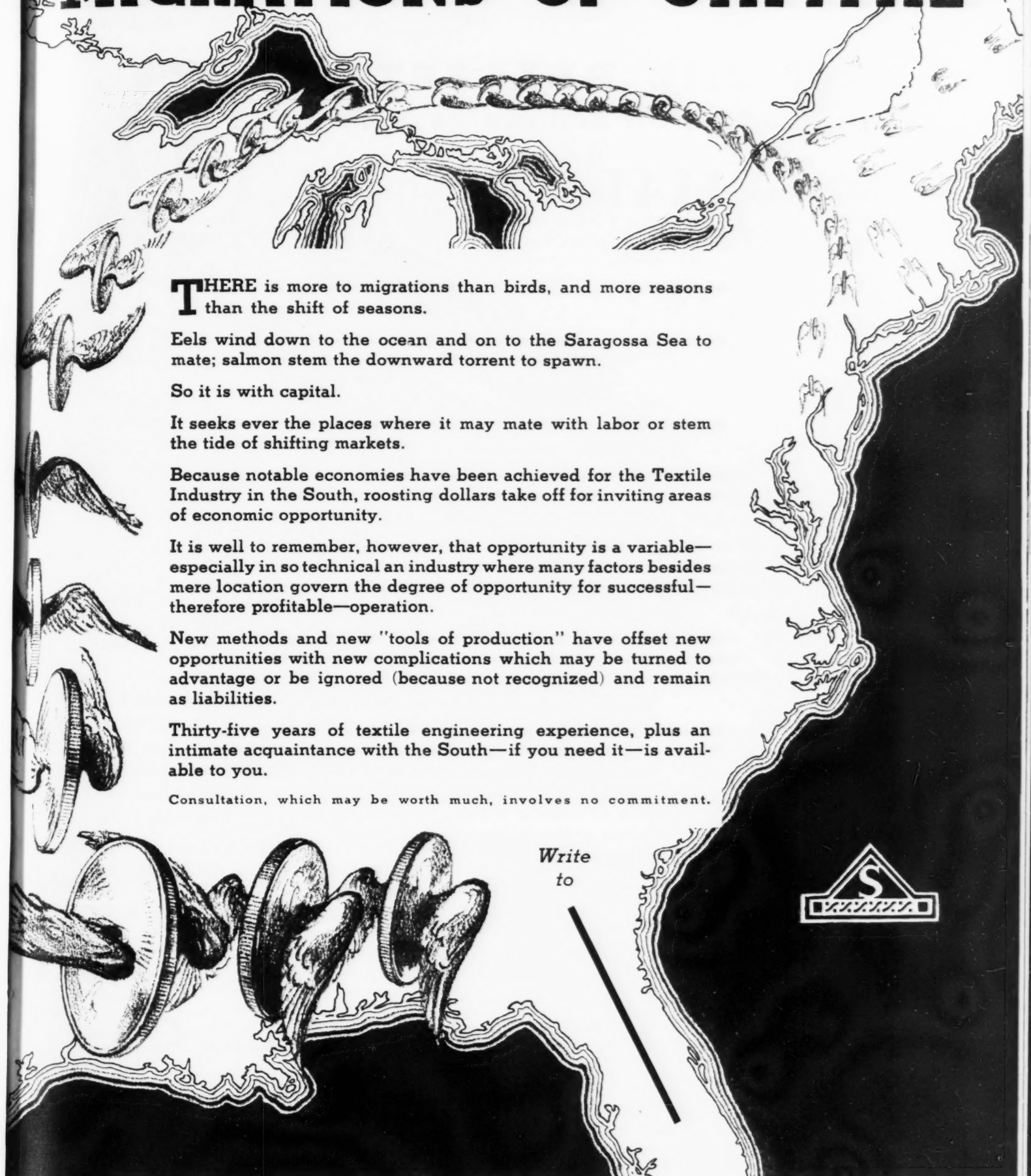
HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.
Southern Plant: 944 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles; Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING

MIGRATIONS OF CAPITAL



THERE is more to migrations than birds, and more reasons than the shift of seasons.

Eels wind down to the ocean and on to the Saragossa Sea to mate; salmon stem the downward torrent to spawn.

So it is with capital.

It seeks ever the places where it may mate with labor or stem the tide of shifting markets.

Because notable economies have been achieved for the Textile Industry in the South, roosting dollars take off for inviting areas of economic opportunity.

It is well to remember, however, that opportunity is a variable—especially in so technical an industry where many factors besides mere location govern the degree of opportunity for successful—therefore profitable—operation.

New methods and new "tools of production" have offset new opportunities with new complications which may be turned to advantage or be ignored (because not recognized) and remain as liabilities.

Thirty-five years of textile engineering experience, plus an intimate acquaintance with the South—if you need it—is available to you.

Consultation, which may be worth much, involves no commitment.

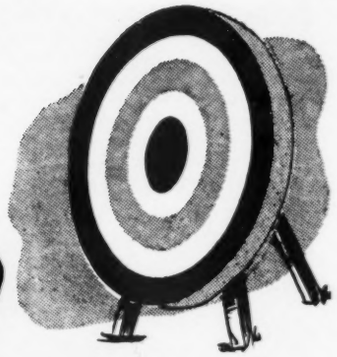
Write to

J. E. SIRRINE & COMPANY

ENGINEERS

GREENVILLE SOUTH CAROLINA

HIT THE BULLSEYE
on Production Schedules with



The New FLAT BOBBIN* *and* SHUTTLE*!

THE NEW U S Flat Bobbin and the Shuttle designed to carry it have proved to be a great team for rapid and economical weaving of silk and rayon.

The U S Flat Bobbin or Quill is light in weight yet strong and durable. It will carry an average of 100% larger package which means longer running in the shuttle, fewer bobbins per loom. It allows the operator to handle more winding spindles — cuts bobbin changes in half. Bobbin can be furnished for slide or electric feeler contacts — finished with famous U S Velvet or Enamel surface.

Flat Shuttle is equipped with Paterson or Unit Tension for plain, box or shuttle-changing looms.

The nearest U S Representative will be glad to supply you with complete information.

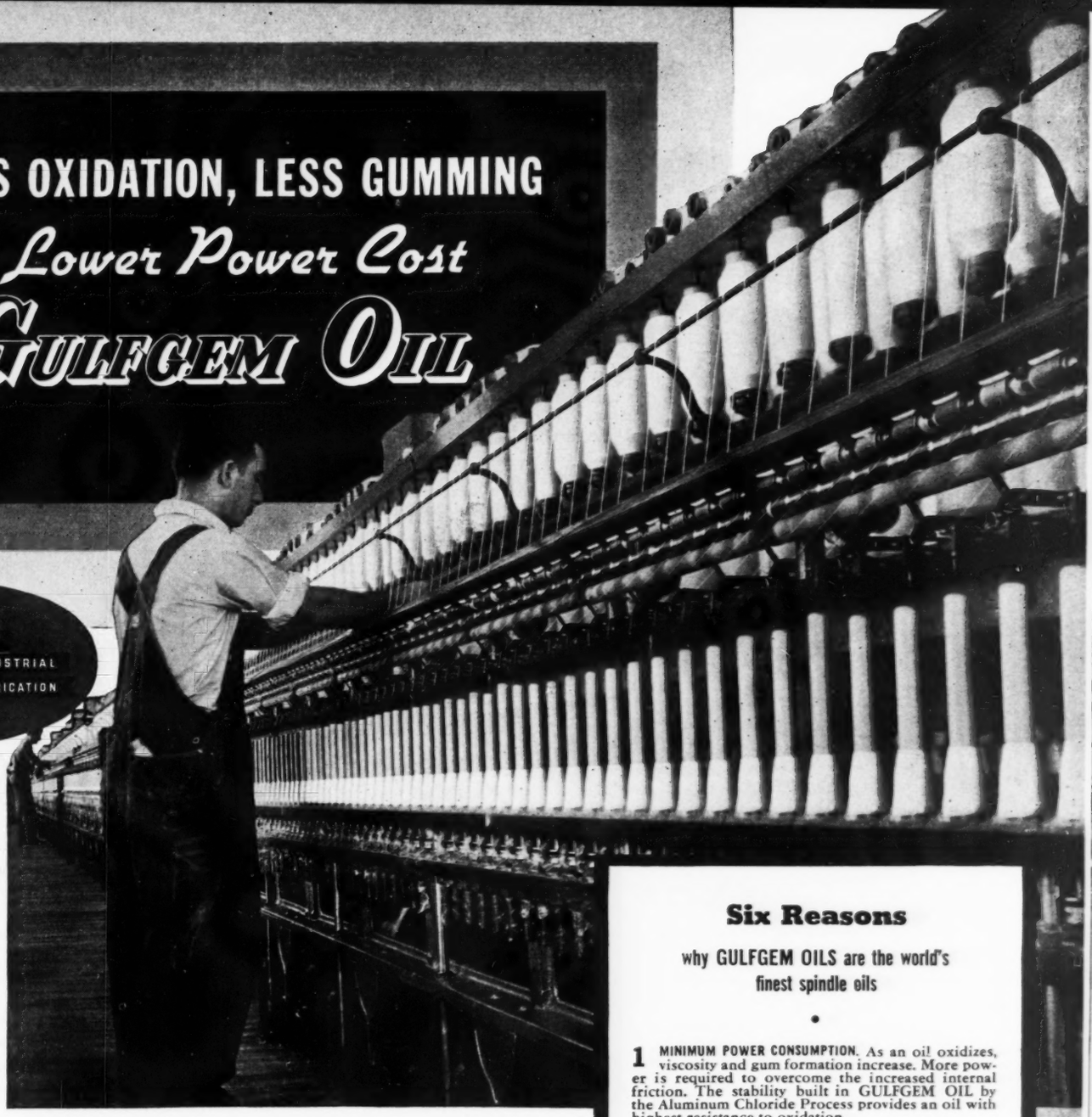
*Patents applied for

U S BOBBIN & SHUTTLE CO.
Lawrence, Massachusetts

OFFICES: Providence, R. I., Manchester, N. H., Philadelphia, Pa., Goffstown, N. H., Monticello, Ga., Charlotte, N. C., Greenville, S. C., Johnson City, Tenn.
CHICAGO AGENT: Albert R. Breen, 80 E. Jackson Blvd.

BETTER BOBBINS • SPOOLS • CONES • SHUTTLES

LESS OXIDATION, LESS GUMMING
Lower Power Cost
WITH GULFGEM OIL



GULF INDUSTRIAL LUBRICATION

Many Mills Report Over-all Operating Costs Reduced With This Improved Spindle Lubricant in Service

LEADING mill operators have established this fact: Over-all operating costs usually have a direct relationship to the efficiency of spindle lubrication. With Gulfgem Oil in service, many mills are reporting the lowest operating costs in their experience.

Because Gulfgem Oil is refined by the ALCHLOR Process, it has highest resistance to oxidation and gumming. Friction drag in spindles—from these causes—is minimized, and power consumption is kept at lowest levels possible.

If you are not using Gulfgem Oil, talk to a Gulf representative about the possibility of effecting economies in power and maintenance—as well as improving plant production—through the use of this high quality spindle lubricant.

Six Reasons

why GULFGEM OILS are the world's finest spindle oils

•

1 **MINIMUM POWER CONSUMPTION.** As an oil oxidizes, viscosity and gum formation increase. More power is required to overcome the increased internal friction. The stability built in GULFGEM OIL by the Aluminum Chloride Process provides an oil with highest resistance to oxidation.

2 **TOUGH FILM INSURES MINIMUM WEAR.** Because of the advanced methods employed in the manufacture of GULFGEM OIL, it provides a tough film which insures efficient lubrication over a long period of time. Thus, spindle wear is reduced to a minimum.

3 **MINIMUM ENDS DOWN.** Maximum stability with minimum change in viscosity—either from temperature variation or from oxidation—insures constant load and smooth operation. The result is fewer breaks and ends down.

4 **LOWEST OIL CONSUMPTION.** Because of the unparalleled stability of GULFGEM OIL, it can be used over long periods of time with minimum deterioration. Thus, long life and a low rate of consumption are assured.

5 **MAXIMUM INTERVALS BETWEEN SPINDLE BASE CLEANING.** If an oil oxidizes and gums at a rapid rate, spindles must be cleaned and lubricated at frequent intervals. The stability of GULFGEM OIL greatly reduces the frequency of shut-downs for this purpose.

6 **LOWER PRODUCTION COST.** Less frequent need for oil changes, time saved by fewer shut-downs, lower maintenance expense and lower power consumption reflect substantial savings in total operating costs.

GULF OIL CORPORATION—GULF REFINING COMPANY

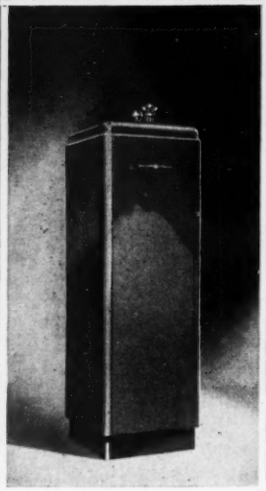
GENERAL OFFICES, GULF BUILDING, PITTSBURGH, PA.

Makers of **GULF NO-NOX ETHYL GASOLINE and GULFPRIDE OIL**

CHECK YOUR WATER COOLING REQUIREMENTS NOW!

Faucet type cooler RM-11. For connection to local water supply. Easily converted to bottle cooler.

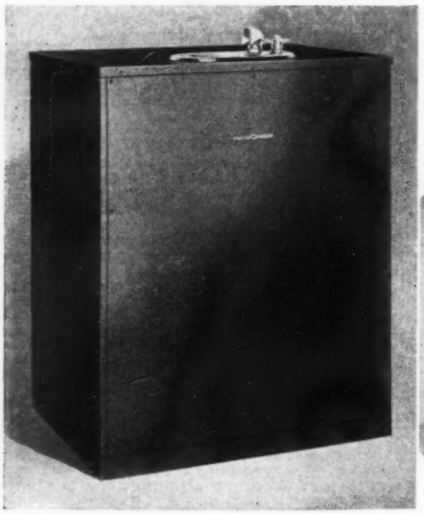
Bottle type cooler BM-11. Takes 2½ or 5 gallon bottle. Portable, compact, and easily moved.



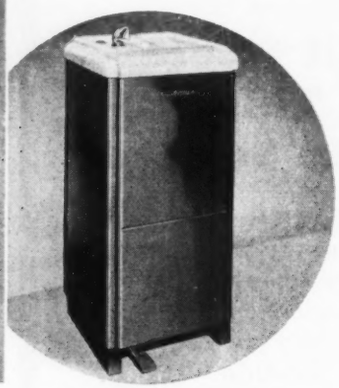
Bubbler type cooler RM-12. For connection to local water supply. Ideal for office installation.

Faucet type cooler RM-21. Finished in rich bronze. Beverage cooling compartment. Foot pedal control.

Large bottle type cooler BM-21. Splash-proof drain basin, contamination proof spigot, foot pedal control.



HEAVY INDUSTRIAL COOLER KM-71. Rugged construction, powerful performance. Other models with double bubblers. Freeze-proof, heat-proof, dust-proof. All-steel cabinet. Contamination-proof bubbler.



THREE SIZES OF THIS PRESSURE COOLER are available. Ideal for office and industrial use. Model RM-71 has *Lint-Proof Mechanism*, specifically designed for use in textile mills where lint and dust might damage the ordinary cooler.

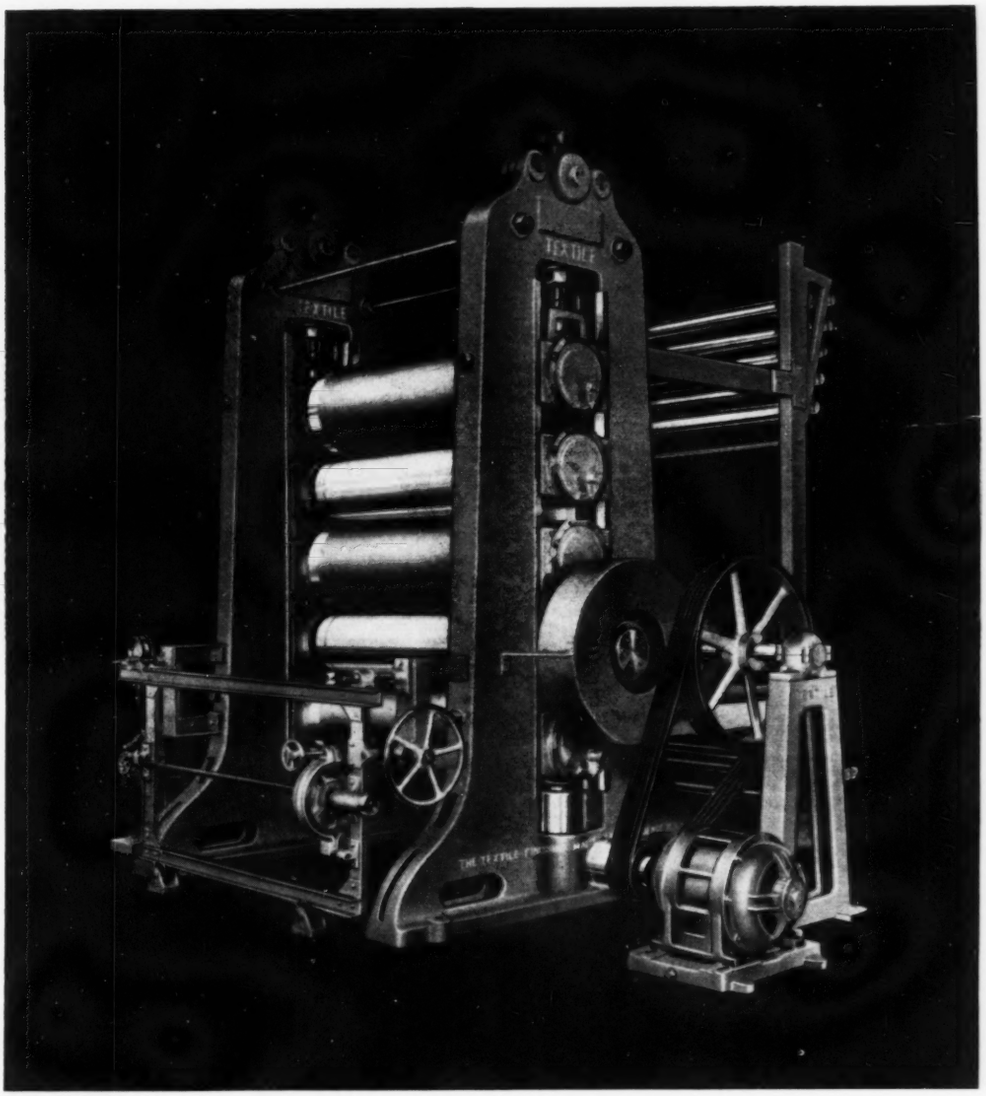
. . . THERE'S A GENERAL ELECTRIC WATER COOLER FOR EVERY NEED

WITH summer coming on, plenty of cool water will be a great asset to your business. See the complete line of General Electric Water Coolers before you consider any other equipment. The manufacturing skill and engineering experience of the world's largest electrical manufacturer assures you of a product that will give years of dependable performance—at the lowest possible operating cost.

26 outstanding features—developed in the famous G-E research laboratories—plus new low prices make these G-E Water Coolers the greatest buys ever offered. Be sure to see the three sensational new low-priced models that offer the world's lowest cost water cooler service. Write for complete details and catalog No. 320-772. General Electric Company, Commercial Refrigeration Division, Section TC3, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC

SMOOTH OPERATION AT HIGH SPEEDS

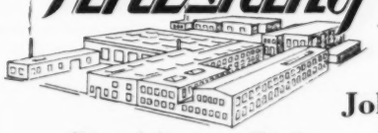


Designed to meet the ever increasing demand for smooth, high speed operation at lowest possible **maintenance cost.**

The Calender illustrated is built with specially constructed rugged side frames; top and bottom rolls fitted with Self Aligning Spherical Roller Bearings; intermediate rolls fitted with Heavy Duty Ball Bearings; pressure is applied by means of Hydraulic Pump and Accumulator Unit; Chasing Rolls are fully ball bearing equipped; Let-off arrangement is of adjustable carriage type.

Textile also offers Rolling, Friction, Embossing and Schreiner Calenders.

The Textile Finishing Machinery Co.



New York Office
50 Church St.

Southern Office
Johnston Bldg., Charlotte, N.C.

Providence, R. I.

MANUFACTURERS OF MACHINERY FOR

BLEACHING, MERCERIZING, DYEING, DRYING, PRINTING, FINISHING AND SANFORIZING TEXTILE FABRICS

Make your buildings gleam with

SUN-PROOF TITANIC OUTSIDE WHITE!

● Let paint transform your buildings—make them gleam! Few investments pay bigger returns. Valuable property is protected. The whole community is happier—more contented. For exterior work specify Pittsburgh's Sun-Proof Titanic Outside White (either liquid or semi-paste). Here is a *super* white—sparkling, brilliant! Titanium is skillfully blended with other pigments to prevent chalking. You get two-thirds greater hiding power—excellent coverage —increased durability. This paint makes ordinary whites *look ordinary*. It *stays white* long after poor paints would be discolored and weather-worn!

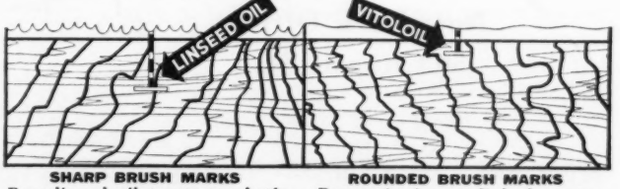
Pittsburgh Plate Glass Co., Paint Division, Pittsburgh, Pa.

PITTSBURGH PAINTS
Smooth as Glass
WALLHIDE • FLORHIDE • WATERSPAR • SUN-PROOF

USE VITOLOIL FOR THINNING EXTERIOR PAINTS!

Pittsburgh's great development—Vitoloil—is a specially processed vegetable oil for thinning exterior semi-paste and liquid paints. Vitoloil penetrates new or old surfaces equal to raw linseed oil, but seals much more securely. Thus it produces a smoother, more uniform film, levels off better, eliminates brush-marks, prevents breakdown of paint. Improves color retention by retarding fading. Vitoloil can be used with ready mixed paints for both priming and finishing coat work.

Pittsburgh carefully guards each step in the manufacture of its paints, thus insuring uniformity of quality. Each Pittsburgh paint passes 21 strict laboratory tests for quality.



SHARP BRUSH MARKS
Raw linseed oil penetrates deeply (see arrow) and surface dries with hills and valleys as shown.

ROUNDED BRUSH MARKS
Penetration is controlled when exterior Vitoloil is used and a much smoother, glossy surface is produced.

UNIVERSAL SYSTEM RETURNS 41%

. . . in this mill, with frequent changes in yarn count, number of ends, and warp lengths.

Typical weekly production: 8 counts of yarn with warp twist, 6 with filling twist — part to be put up on section beams, part to be ball warped on equipment similar to type shown above.

MILLS having a variety of orders requiring frequent changes, will make their greatest savings, in nearly every case, with the Universal System. For this particular mill, the return, when replacing slow speed spooling and warping, was 41%.

FLEXIBILITY AT THE WINDER. In this mill the quantity of each yarn count varies from week to week. But the Roto-Coner can handle several yarn counts at one time, so this mill, with 800 spindles, can divide them among the operators to wind any size of yarn without loss of machine efficiency. When one bobbin requires 6 minutes to wind and another 4 minutes, the spindle assignment can be changed so that maximum machine efficiency will be obtained as well as maximum operator efficiency.

Furthermore, the flexibility in size of the machine units made it unnecessary for this mill to invest in needless surplus equipment. A reasonable surplus was provided for.

FLEXIBILITY IN YARN INSPECTION. Particularly on fine counts, the Universal System gives this mill the opportunity to remove yarn imperfections without sacrificing machine efficiency. Slub catchers can be set for any degree of inspection, depending on the quality of fabric desired, and the spindle assignment can be changed at any time to maintain best machine efficiency.

FLEXIBILITY AT THE CREEL. In this mill three warpers are required. One warper runs one yarn count all the time. The cones are magazined together so there are no stops for creeling

On the other two creels, the alternate cone holders are used for loading one yarn count while another count is running. In this way, the mill runs several yarn counts in each warper and creel.

INVESTMENT MAINTENANCE, OTHER SAVINGS

When handling a variety of yarn counts, the Universal System has the lowest investment of any high speed system. In this mill the total investment was $27,000. Depreciation at 7% is only $1,890 a year. Maintenance runs about $135.00 a year. Total operating charge, including payroll, will show an annual saving of $11,000 over the slow speed system . . . or 41% return on investment.

Different figures, of course, would apply to other mills. This mill, however, is illustrative of those 3 out of 4 cases where the Universal System will produce the highest net return.

IN 3 OUT OF 4 MILLS - MORE NET RETURN

UNIVERSAL WINDING CO

BOSTON PROVIDENCE SPRINGFIELD NEW YORK CHARLOTTE UTICA ATLANTA

FOR A BREATH-TAKING FINISH

PROCESS WITH PARAPON

REG. U. S. PAT. OFF.

ACETATE · VISCOSE · SILK · COTTON · draw gasps of amazement and flattering compliments when these fabrics are finished with ***PARAPON***

● They acquire a permanent softness . . . a luxurious appearance. Drapes · gowns · lingerie · piece goods · whatever you process · will be more acceptable to the ultimate consumer · if you finish with ***PARAPON***

● ***PARAPON*** penetrates the fibres · softens the fabric completely · and imparts a full, heavy hand. Being inert to oxidation, it eliminates the possibility of offensive odors developing in the finished fabric.

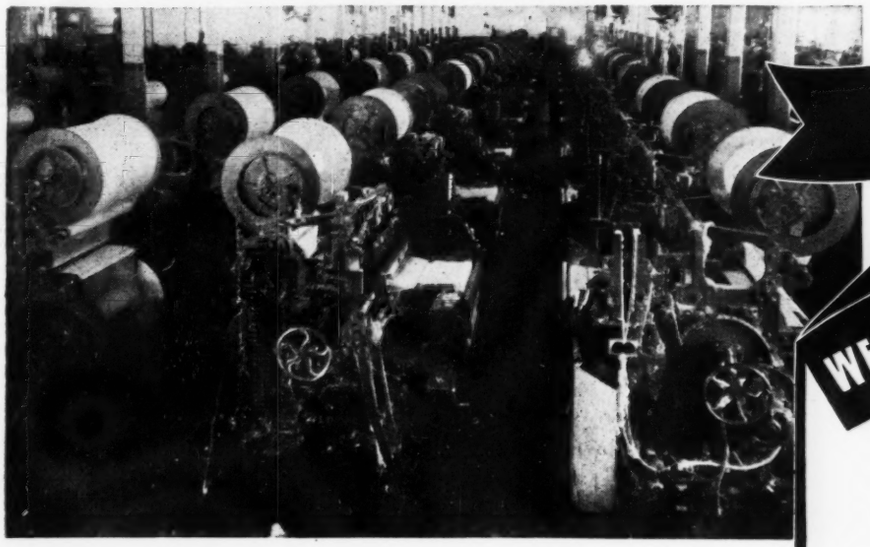
● Because of ***PARAPON's*** greater efficiency over ordinary finishing agents, these multiple benefits are available without any increase in cost. A trial order and detailed information await your request. Put ***PARAPON*** to work now!

"The Finest Fabric is Finer for Its Use"

ARKANSAS CO · INC ·

233 BROADWAY NEW YORK

Low Cost Weaving *demands* *High Speed Equipment*



C 3 LOOM

WESTINGHOUSE DRIVE

Crompton & Knowles type C-3 Towel Loom in a large southern mill. Looms are powered by Westinghouse 3-point suspension motors and WK starters.

IN many cases the speeding up of old looms has failed to prove the answer to low cost weaving.

But weaving costs can be lowered right away by replacing old looms with modern high-speed equipment such as the Crompton & Knowles C-3 looms equipped with Westinghouse Motors and Control.

When you buy high-speed equipment specify Westinghouse Drive because it's built to keep these modern looms at peak output. Here are the reasons:

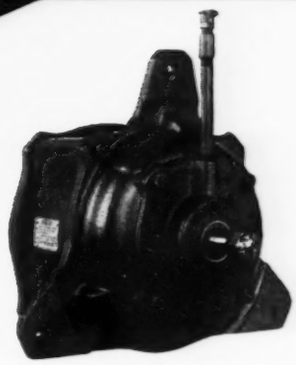
Ample power for breaking in and reserve capacity for all loads.

High efficiency and power factor that give low power consumption.

Low maintenance is assured because the oil filler is easily accessible, the oil column is vertical and has extra capacity for quick filling. Over-oiling is impossible and oil cannot get into the windings.

Tried-and-Proved Control that protects the motor against dangerous overloads yet permits safe overloads without shut-down.

Westinghouse drive is mated to the latest types of looms such as the C & K Models C3, C4, S3, S4, W2, W3 and Draper models X, C, XK and XL. Write for further details. Westinghouse Electric & Manufacturing Co., East Springfield, Mass. J 90035



Westinghouse Loom Motors have extra strength, high efficiency and long wearing bearings to withstand the strain of high-speed loom operation.

★

Pedestal-mounted WK-18 starter. Guards the motor against dangerous overloads. Safely and quickly reset when tripped.

Westinghouse LOOM DRIVE

NO DRIP...NO FEATHERING DOWN WITH AMCO
No. 4 SELF-CLEANING ATOMIZER

Drip never damages fibres in a mill where the Amco No. 4 Atomizer is installed. In addition to its self-cleaning features, this atomizer is built to start or cease operation with clean, split-second action.

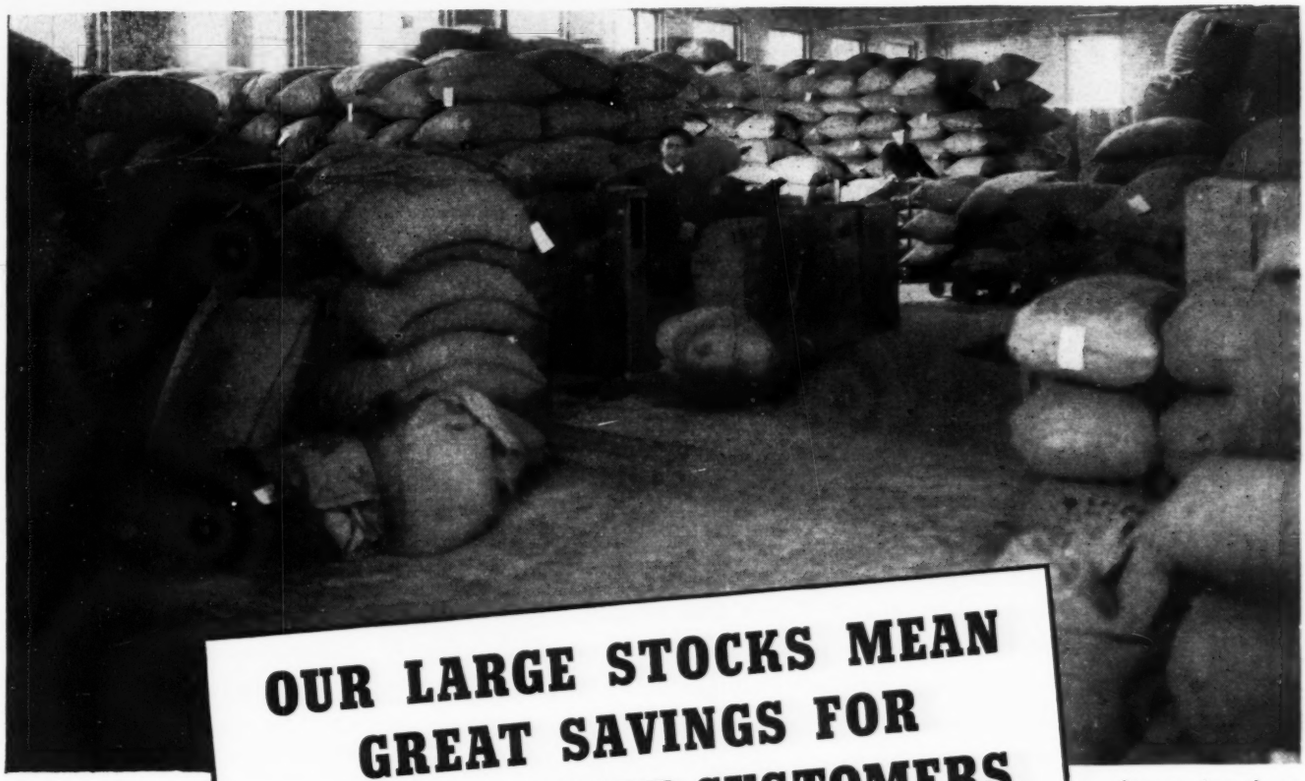
This action is automatic and simple. When humidity control or manual action shuts off the atomizer, air pressure drops. When it drops below the proper point for complete atomization, the water orifice is closed. The water orifice does not reopen until air pressure has risen to the proper atomization point. In addition to preventing drip, this feature closes the orifices of the No. 4 against lint and fly while it is shut off.

Built to endure, and built to save labor, the Amco No. 4 Self-Cleaning Atomizer is typical of the benefits enjoyed by the owner of an Amco installation. Why not discuss your humidification problems with the Amco engineer . . . soon? American Moistening Company, Providence, R. I. . . . Boston . . . Atlanta . . . Charlotte.

AMCO
HUMIDIFICATION

TAKE YOUR HUMIDIFICATION JOB TO A HUMIDIFICATION SPECIALIST

TRAGACANTH PRICES ADVANCING!



Corner view of our warehouse showing part of our large stocks of Gums.

OUR LARGE STOCKS MEAN GREAT SAVINGS FOR JACQUES WOLF CUSTOMERS

• The Gum Tragacanth crop is below normal this year and prices are steadily advancing. Our stocks are extensive, both Aleppo and Persian, and we can supply—

WHOLE GUM, CRUSHED, GRANULATED, POWDERED

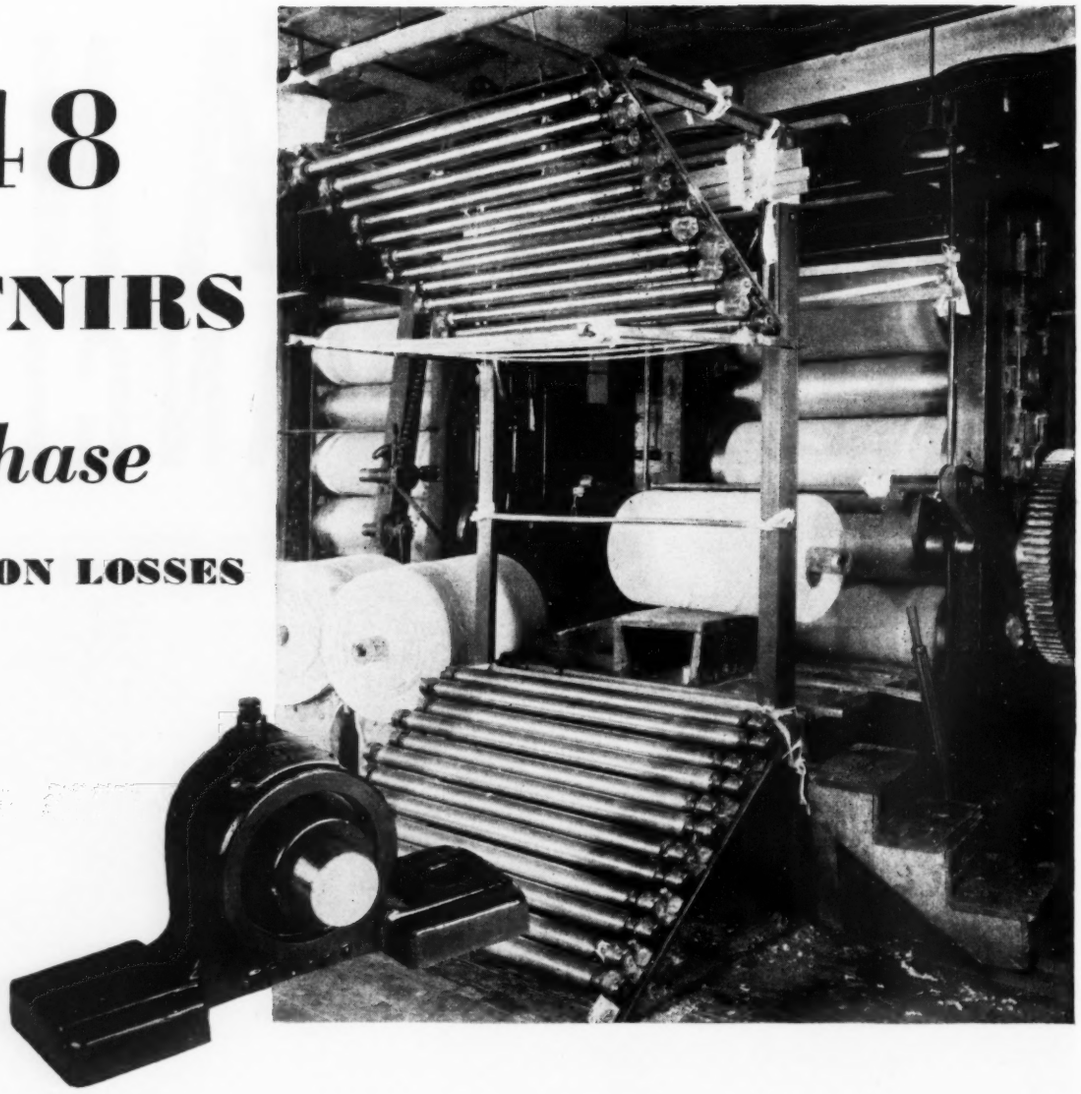
Since the most desirable gums are from the early pickings, anticipate your needs now and send us your order while stocks are complete. Immediate or future delivery.

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY

Warehouses: **Providence, R. I.; Philadelphia, Pa.; Utica, N.Y.; Chicago, Ill.; Greenville, S. C.; Chattanooga, Tenn.**

48 FAFNIRS *Chase* FRICTION LOSSES



On this chasing calender there are 48 Fafnir Ball Bearing Pillow Blocks on the chasing rolls. Only one of the many Fafnir applications at this mill, it is showing impressive savings in maintenance costs by reducing friction losses to a minimum.

In any mill, for any one of the 63 machines through which the cotton fiber may pass in its processing, there is a Fafnir that can save maximum power costs. In finishing machinery, too, wherever the application calls for bearings... for pillow blocks that are exposed to intense heat on dryers or to acid fumes on agers... for roller bearing boxes on the calender stacks... there is always either a standard or a specially-designed Fafnir that can do the job most efficiently.

"The most complete line of ball bearings in America" can save power for *you* and reduce your maintenance costs. The Fafnir Bearing Company, New Britain, Connecticut. Representatives also at: Atlanta, Georgia ... Houston, Texas ... Charlotte, N. C. ... Boston, Massachusetts ... Dallas, Texas ... Birmingham, Ala.

FAFNIR BALL BEARINGS ARE NOW IN SERVICE IN SUCH TEXTILE MACHINERY AS THE FOLLOWING:

Bale Breakers	Dyeing Equipment
Feeders	Extractors
Openers	Dryers
Feed Tables	Printing Machinery
Distributors	Agers
Breaker Lappers	Soapers
Intermediate Lappers	Tenter Frames
Finisher Lappers	Calenders
Cards	Button Breakers
Roving Frames	Shoddy Pickers
Spinning Frames	Garnett Machines
Twisters	Burr Pickers
Winders	Mixing Pickers
Warpers	Scourers
Slashers	Fulling Mills
Looms	Shearing Machines
Bleaching Equipment	Rayon Pot Spinners

FAFNIR BALL BEARINGS

A simple

DIRECT METHOD

of financing modern business

THE DEFINITE benefits provided by discounting accounts receivable are recognized by leaders all along the front line of industry. Thousands of top flight manufacturers and wholesalers now speed up business through this modern way of keeping capital constantly liquid and at work.

Selling, or discounting, accounts receivable is a simple method of getting immediate cash for the merchandise you have sold. It is flexible and convenient. It is safer and quicker than a mortgage, stock issue or other expedient as a means of providing working capital. It costs no more—in many cases, less.

Two-way Benefit in Discounting Accounts

In the plainest language, here is a financing system that has a double-action benefit . . . to your creditors and suppliers *as well as to yourself.* Your improved cash position will benefit your merchandise creditors. They'd rather see you taking discounts than awaiting full maturities or asking extensions. The quicker you pay, the more you can buy from them and the less *their* money is tied up.

With cash in lieu of book assets, you are in a position to discount bills, purchase at lower prices, finance a greater volume of sales . . . all of which add to your profits.

Corporations, Insurance Companies Invest Surpluses

Government agencies, Federal reserve banks, and sound strong financial institutions everywhere countenance this sensible financing practice. Great industrial corporations, insurance companies and estates invest surplus funds with us for employment in this financing project. If your business is in the least hampered or held back by inadequate liquid capital, why not investigate. A brief consultation will show if we can help you. All correspondence and interviews are strictly confidential and carry no obligations. . . Write today.

COMMERCIAL CREDIT COMPANY

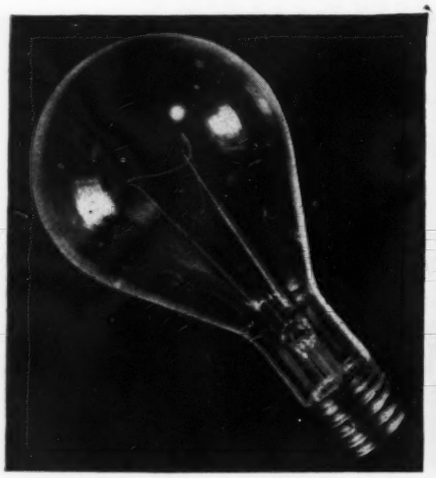
BALTIMORE, MARYLAND

GENERAL ELECTRIC

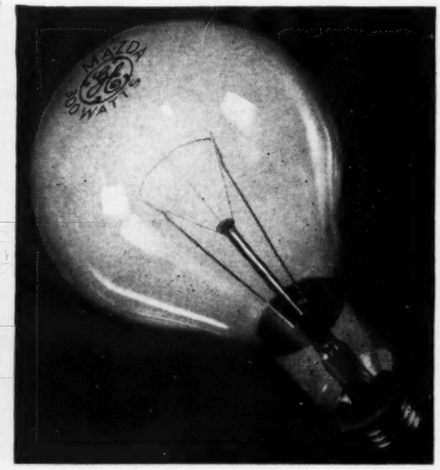
MAKES LAMPS FOR EVERY LIGHTING PURPOSE

General Electric makes a lamp for every industrial lighting service. A few of them are shown here. MAZDA lamps made by G-E represent the result of more than 40 years of research and development. Each of them must pass 480 checks and inspections in manufacture to guard against imperfections affecting their performance in service.

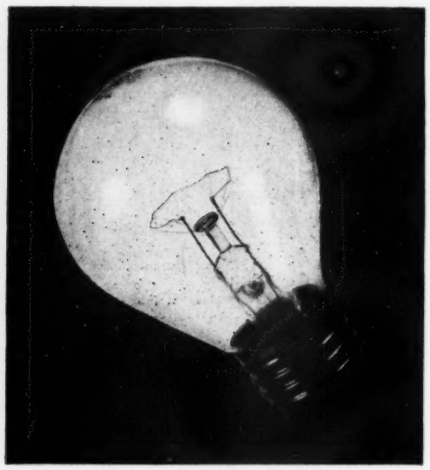
In addition, General Electric makes mercury lamps which differ radically in principle from incandescent MAZDA lamps both in operation and in color quality of light produced, but are suitable for a wide range of industrial applications. For detailed information, see the nearest General Electric Lamp Sales Office.



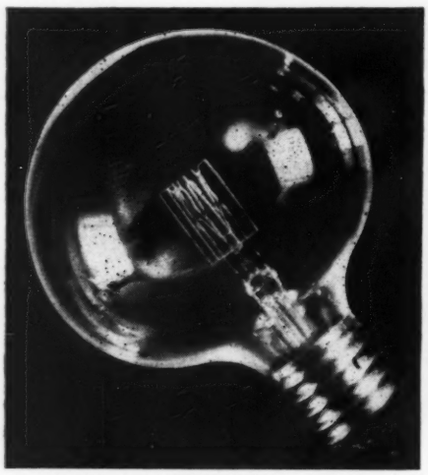
GENERAL LIGHTING SERVICE lamps fulfill most of the lamp requirements for ordinary factory use. Manufactured in sizes from 15 up to 1500 watts and available in certain sizes in clear, inside frosted, white bowl, and daylight bulbs.



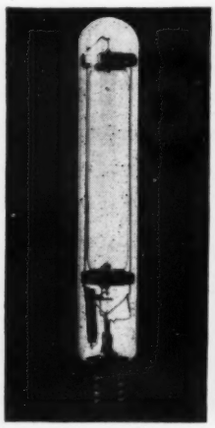
NEW 300-Watt MAZDA LAMP with medium screw base, also for general lighting service. This lamp is designed primarily to increase the illumination from many indirect and semi-indirect fixtures now using 200-watt lamps.



VIBRATION AND ROUGH SERVICE Lamps. The Vibration service lamp (shown above) is made to withstand high-frequency vibration such as produced by high-speed machinery. Rough service lamps are made to withstand severe shock and bumps.

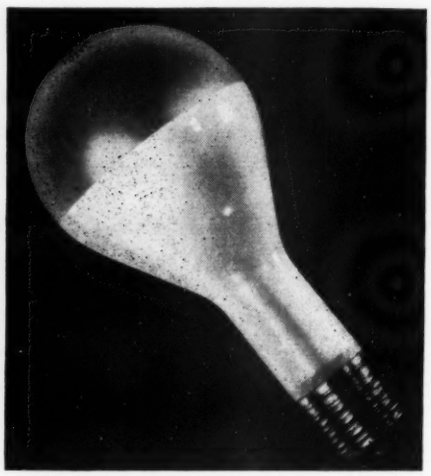


FLOODLIGHTING SERVICE lamps are made with the filament concentrated into a small space for use in floodlighting projectors giving a narrow beam of light which can be thrown a relatively long distance.



MERCURY LAMP 400-watt size shown. This new lamp has a conventional screw base and can be used in common types of reflecting equipment. An auxiliary is necessary.

NEW 1000-Watt MEDIUM BI-POST MAZDA lamp. (*Right-above*) A new lamp designed for such services as general lighting, outdoor floodlighting, and airway beacons.



SILVERED BOWL MAZDA LAMPS. Regular MAZDA lamps with a coating of mirror silver on the bowl. They provide high quality illumination when used in the proper types of lighting equipment.

GENERAL ELECTRIC COMPANY, DEPT. 166, NELA PARK, CLEVELAND, OHIO.

GENERAL ELECTRIC

Power at 5 Mills per K.W.H.

24-hour per day reliability—and a close speed regulation under load variation, which gives the uniform speed of spindles so necessary in the production of fine, uniform-quality yarns—is the report of the Sellers Manufacturing Company, Saxapahaw, North Carolina, on their experience with this 810 horsepower Superior Diesel.

In any highly competitive industry, power cost is important. Let us survey your plant to show how Superior Diesels may save money for you—no obligation, of course.

Large or small Superior Diesels are available for any size plant or any industry. They operate perfectly in conjunction with other engines or generating units—often greatly improving overall efficiency where full Diesel capacity is not justified because of process needs.

THE NATIONAL SUPPLY COMPANY
OF DELAWARE
SUPERIOR ENGINE DIVISION
LOS ANGELES, CALIFORNIA SPRINGFIELD, OHIO PHILADEPHIA, PA.

Superior DIESELS

HEAVY DUTY MODELS: 50 to 810 H.P., 250 to 720 R.P.M. • HIGH SPEED MODELS: 25 to 150 H.P., 1200 to 1800 R.P.M.

Twelfth

SOUTHERN TEXTILE EXPOSITION

●

TEXTILE HALL
GREENVILLE, S. C.
APRIL 5 TO 10

●

THE latest inventions and designs in modern machinery, installations, accessories, and supplies will be shown by the leading manufacturers of America.

Everything that is new in textile plant equipment to reduce cost, improve quality, and increase production may be seen.

From Greensboro on the north, and Atlanta on the south, there will be nightly railway Pullman service. These cars will be parked in Greenville the following day, and returned at midnight.

Please write for room reservations. All visitors may obtain comfortable quarters.

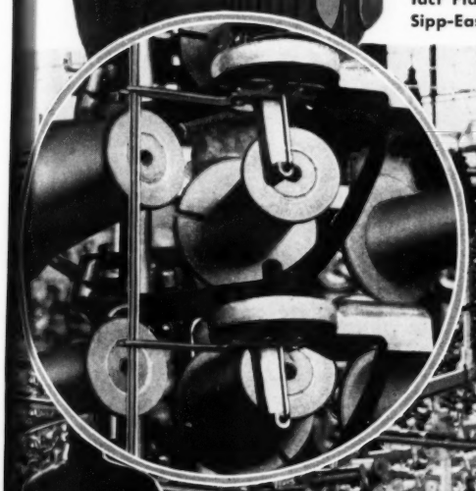
TEXTILE HALL CORPORATION

1632 SENTINELS

made of Anaconda Phosphor Bronze

on this Modern High Speed Creel

Phosphor Bronze Contact Plates used in the Sipp-Eastwood Tension.



Standing guard over quality on this high speed creel are 1632 tension units which constitute the nerve system of this sensitive textile machine built by the Sipp-Eastwood Corporation, at Paterson, New Jersey. If one of the 1632 ends should break, or tension fail for any reason, a phosphor bronze contact flashes an individual light, and immediately stops the warper. Thus quality of output on this "320 yards-a-minute" creel is constantly guarded, down-time is reduced to a minimum, and spoilage is practically unknown. Many small but important rods, bushings and stampings made of Anaconda Copper Alloys are also employed in the construction of this machine. • Throughout the Industry, Anaconda Metals are contributing to the remarkable efficiency and durability of modern textile equipment. Typical applications of these non-rust, easy-to-fabricate metals include; linings for tubes and size boxes, copper covered squeeze rolls, miscellaneous rollers, facings for rotary press beds, spirals for cloth openers, traveler rings, ducts, slasher hoods, humidifying equipment, loom and spinning equipment, bushings, bearings, spreader bars, hydro-extractor baskets, pails, dippers, electrical conduit, copper tubes for conveying size, etc.

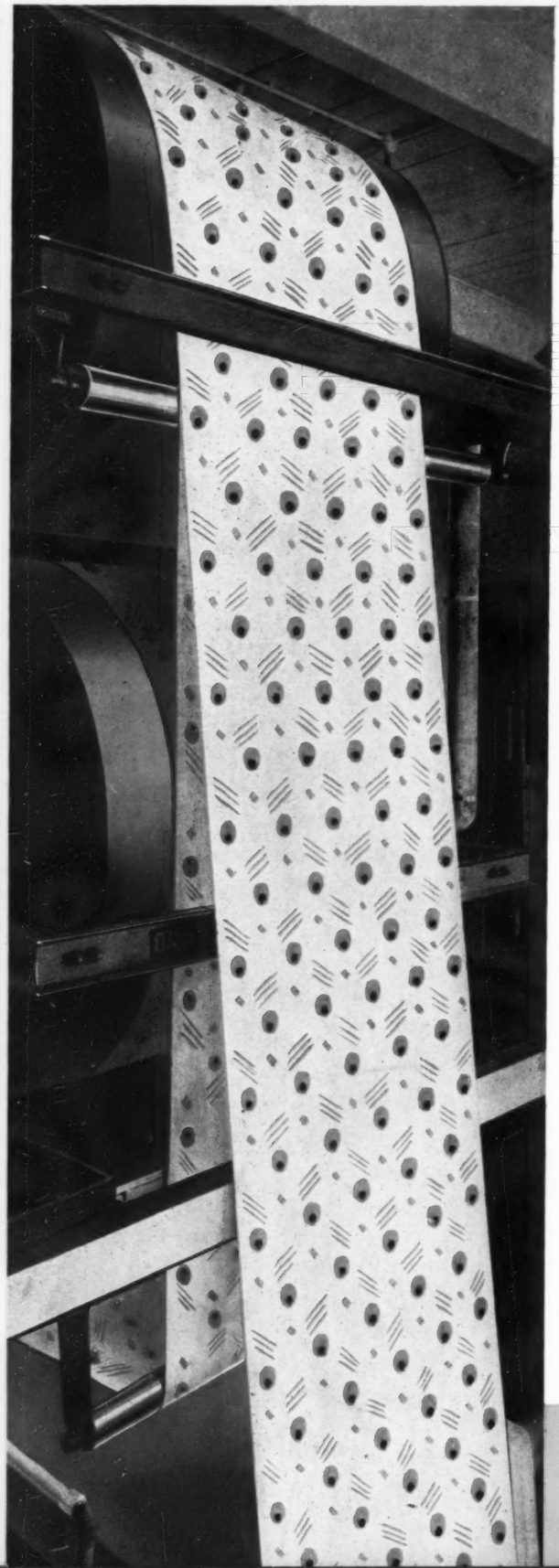
THE AMERICAN BRASS COMPANY

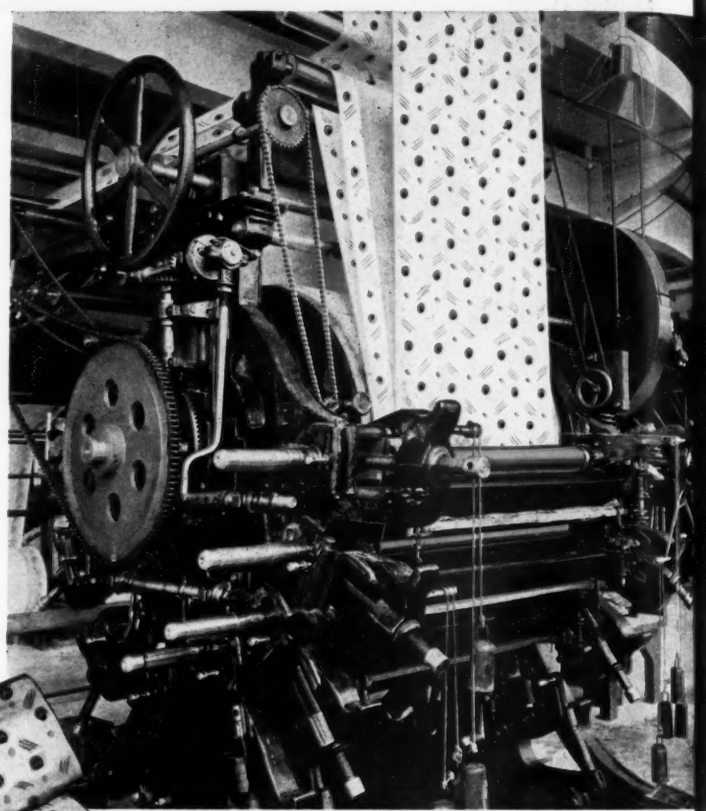
ANACONDA
from mine to consumer

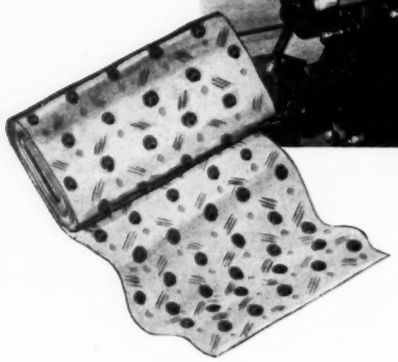
GENERAL OFFICES: WATERBURY, CONNECTICUT
OFFICES AND AGENCIES IN PRINCIPAL CITIES

Anaconda Copper and Brass

Finer Textiles PRODUCED AND SOLD . . . AT LOWER COST





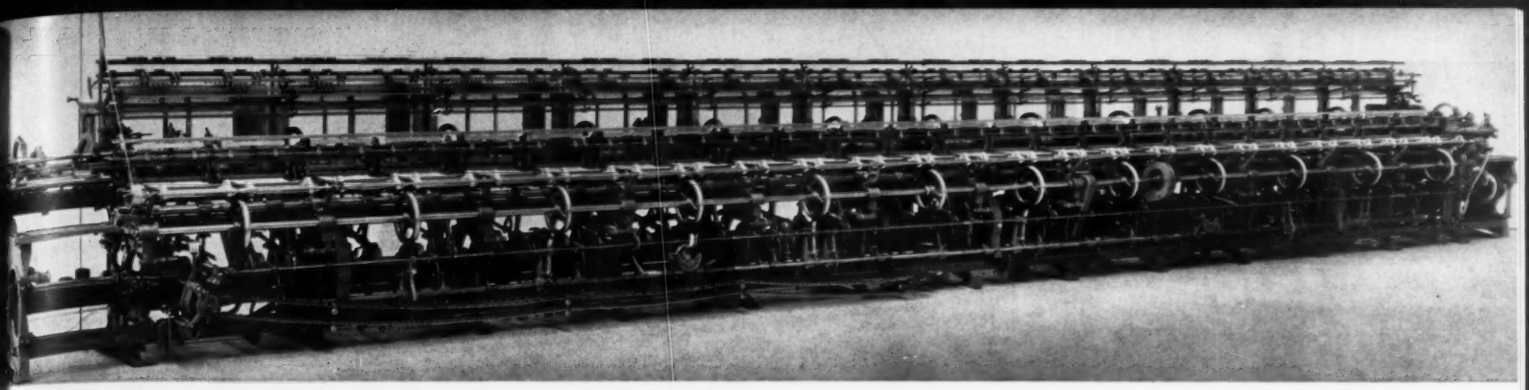


Rice, Barton and Fales Standard Eight Color Printing Machine. Printing Rollers, Color Pans, Lead Rolls and Bushings are made of non rusting Anaconda Metals.

PRINTED FABRICS

For nearly a hundred years Rice, Barton and Fales, Inc., of Worcester, Mass., have been manufacturing textile printing equipment. In all of these machines, the engraved printing rollers are made of copper. For each color there is a separate printing roller and a copper color pan, as no other metal has proved so satisfactory. Bronze bearings are used to carry the steel mandrels on which the printing rollers are mounted, and the cylindrical bodies of the drying rolls (at left) are also made of copper. Lead rolls of brass tubing carry the fabric to and from the machine, and numerous other parts are made of durable, non-rusting Anaconda Metals.

Anaconda



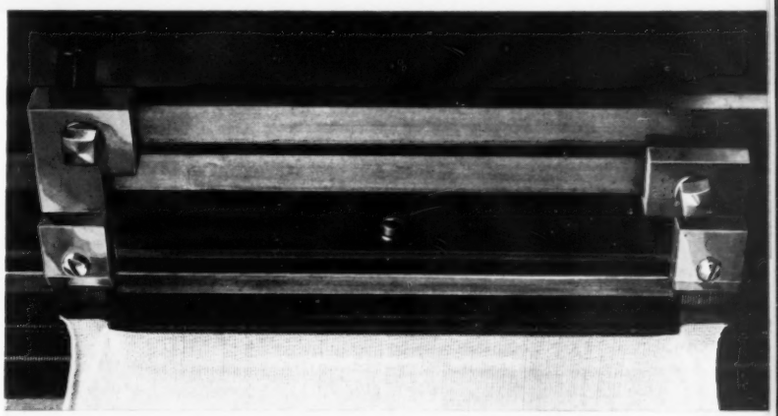
The Reading Full-Fashioned Knitting Machine and two of the many places where Anaconda Cold Drawn Brass Shapes are used

FULL-FASHIONED HOSIERY

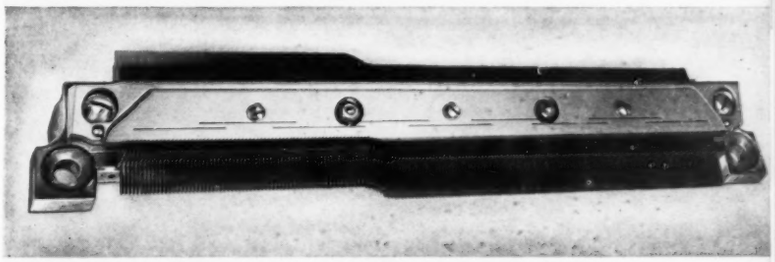
• Thirty-six years ago, practically all of the stockings manufactured in this country were of the seamless, tubular type—woven on circular looms, and naturally apt to wrinkle in wear.

• Realizing the demand for better-quality stockings at moderate price, the Textile Machine Works of Reading, Pa., designed and built, at about that time, the first American-made full-fashioned knitting machine. So successful was this first machine in producing quality hosiery on a quantity basis, and so well have subsequent models been developed and marketed, that a majority of all women's stockings manufactured in America today are produced on Reading Full-Fashioned Knitting Machines.

• The illustration above shows a modern Reading Machine, composed of 24 sections, on which a corresponding number of individual stocking blanks are knit simultaneously. The illustrations at the right show two of the several parts (in each section) where cold-drawn brass shapes are used to promote smooth knitting action and long life, with a minimum of friction and wear.



Narrowing Combs of Anaconda Cold Drawn Brass Shapes



Anaconda Brass Verge Plate in Sinker-Head Assembly

ANACONDA CORROSION-RESISTANT METALS

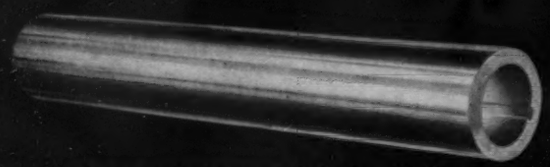
Anaconda Metals for the Textile Industry include Copper, Brass, Bronze, Everdur, Ambrac, and other Special Copper Alloys in the forms of sheets, wire, rods, tubes, extruded shapes, and hot-pressed parts. Also many special products such as printing rollers, dry cans, welding rods, pipe, fittings, etc., several of which are described in detail on the next page.

ENGINEERING COOPERATION

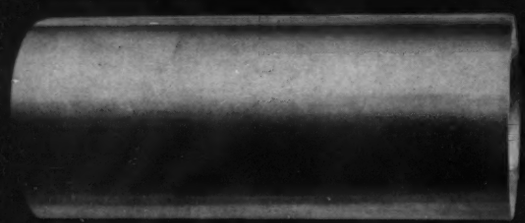
Anaconda Engineers and Metallurgists are always glad to cooperate in the solution of any manufacturing or construction problem where choice of materials is an important consideration.

Copper and Brass

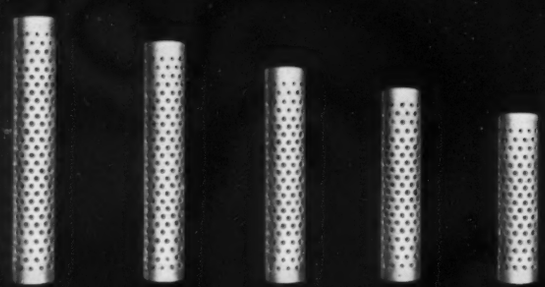
SPECIAL ANACONDA PRODUCTS *for the* TEXTILE INDUSTRY



Anaconda Copper Printing Rollers



Seamless Copper Tubes for Dry Cans



Perforated Ambrac Tubes for Dyeing Equipment

Welded Everdur Tank for Dye Process Work

ANACONDA COPPER PRINTING ROLLERS

These rollers are accurate in dimensions, uniform in hardness, and meet all requirements of machinability, burnishing, pantographing and etching. They are particularly free from porosity and possess excellent wearing qualities. Available in all standard bores.

ANACONDA SEAMLESS COPPER TUBES FOR DRY CANS

Accurate in dimensions, uniform in temper, smooth of surface, round and straight. Being cold-drawn through dies, these Seamless Tubes possess high strength and rigidity—Furnished either plain or tinned as required up to 26" O.D.

AMBRAC METAL*

A high-strength alloy which resists the corrosive action of both acids and alkalis alike. Composed principally of copper and nickel, Ambrac is not refractory, but can be bent, stamped, spun, forged, drawn and cast almost as easily as brass. Available in sheets, wire, rods, tubes, casting ingots.

EVERDUR METAL*

Composed principally of copper, this remarkable alloy combines high strength with excellent resistance to a wide range of corroding agents used in the textile industry. It is easily welded by all commonly used methods. Leading manufacturers can furnish tanks, vats, kettles, buckets, dippers, extractor baskets, bleaching and dyeing equipment, kiers, valves, fittings, linings, etc., made of Everdur Metal.

ANACONDA SEAMLESS BRASS PIPE AND COPPER TUBES

Anaconda Seamless Brass Pipe for use with threaded fittings is made in two alloys—67* Yellow Brass Pipe for use under normally corrosive conditions, and 85* Red Brass Pipe, the most durable brass pipe produced commercially. Anaconda Deoxidized Copper Tubes are used extensively for plumbing and carrying lines. Anaconda Fittings for assembling the tubes, are furnished in both solder and flared tube types.

*Trade Mark Reg. U. S. Pat. Off.

THE AMERICAN BRASS COMPANY

ANACONDA
From mine to consumer

GENERAL OFFICES: WATERBURY, CONNECTICUT
OFFICES AND AGENCIES IN PRINCIPAL CITIES

Anaconda Copper and Brass

• no oil • carbonization

IN WESTINGHOUSE *Hermetically-Sealed* WATER COOLERS

● First, because only highest quality, especially selected oil is used. Second, it's *sealed* away forever from water and dirt. And most important, it never "cracks" from heat, because the Westinghouse Built-in Watchman thermostat automatically protects the entire mechanism from over-heating, from any cause. Such oil protection means long life, low maintenance and operating cost.

Then, you gain these other advantages that save money and assure dependable operation:

Hermetically-sealed . . . lifetime lubrication.
Water-cooled or air-cooled mechanism.
Brushless motors . . . no burn outs.
Improved Dual-action evaporator.
Non-clogging drain . . . sanitary bubbler.
Freon refrigerant . . . temperature selector.
Exclusive Westinghouse 5-year warranty.

For dependable water cooling, at lowest cost, see your local Westinghouse dealer, or write to Dept. 745, Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.

ONLY WESTINGHOUSE GIVES YOU THIS DOUBLE PROTECTION . . . HERMETICALLY-SEALED WITH 5-YEAR WARRANTY

Westinghouse

Hermetically-Sealed

WATER COOLERS

Explosion-proof and freeze-proof models available

Gilmer grip gives POWER

A GILMER V-BELT has *straight sides* that instantly bulge outward as the belt flexes around the sheave.

It would bulge along the dotted lines if steel sidewalls did not prevent. So the bulging distributes itself over the entire width (cross-hatched) of the belt.

All the cross-hatched area represents pressure against each sidewall. This lateral stress exerted across the entire thickness of the belt naturally creates a snugger, firmer grip—*Gilmer Grip*. Locking with much the same action as a friction clutch, Gilmer Grip cuts out slip and *delivers more power*. More power means more profits. The Gilmer Grip pays! . . . It's a feature, too, of Gilmer Single Strand V-Belts for fractional horsepower drives.

Gilmer Top Rubber is tough tension rubber with extra "give" that prevents "misfits" on multiple drives.

Gilmer Pulling Cords are super-strong, rubber-locked plies that concentrate great strength in a thin pulling section. Gilmer patented construction keeps these plies horizontal in operation on multiple drives.

Gilmer Bottom Rubber is brute-strength rubber specially developed by Gilmer engineers. It supports pulling cords securely, gives great crosswise rigidity, and *resists heat*. Gilmer V-Belts run cool on multiple drives.

Gilmer Double Jacket construction prevents worn spots at any one point, more than triples the belt's working life on multiple drives. Twin jackets of tough bias-woven fabric are separated by a thin film of flexible rubber.

Gilmer Controlled Stretch insures perfect, permanent *matched working lengths* on multiple drives. Gilmer engineers pre-test every Gilmer V-Belt for stretch under maximum load.

FREE—Catalogue—FREE

L. H. GILMER COMPANY, Tacony, Philadelphia

Gilmer BELTS

STAINLESS STEEL DRYING CYLINDERS

with Anti-Friction Bearings

See these drying cylinders at the Southern Textile Exposition . . . April 5th to 10th

BOOTHS 58 · 59 · 60

We can furnish stainless steel drying cylinders mounted in Hyatt self-aligning Roller Bearings, or SKF self-aligning ball bearings; completely equipped with syphons, rotary joints and traps—Satin or Polished Finish.

H. W. BUTTERWORTH & SONS CO.
PHILADELPHIA, PA.
Established 1820

PLANTS at PHILADELPHIA and BETHAYRES, PA.

New England Office:
TURK'S HEAD BUILDING
Providence, R. I.

Southern Office:
JOHNSTON BUILDING
Charlotte, N. C.

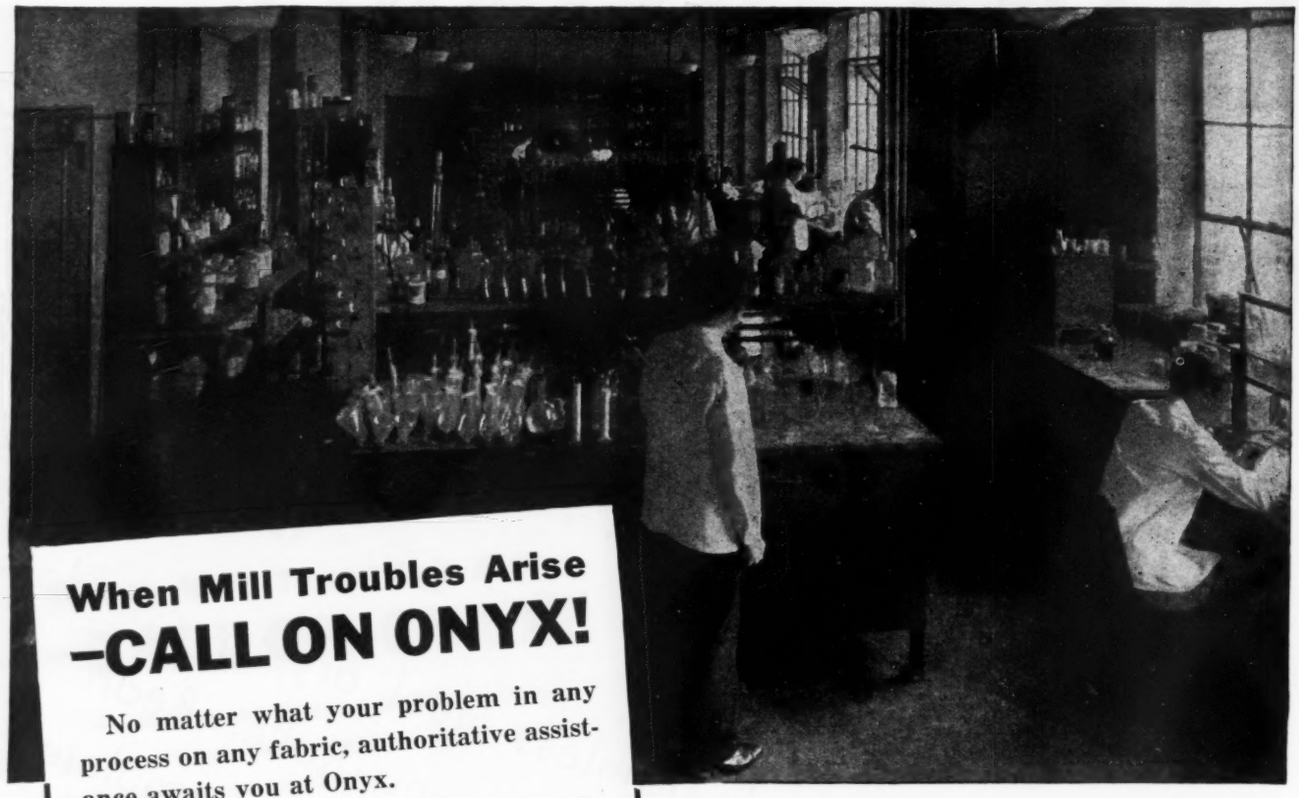
In Canada:
W. J. WESTAWAY CO.
Hamilton, Ontario

★

BUTTERWORTH *finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY

VALUABLE TECHNICAL SERVICE for DYERS-PRINTERS-FINISHERS



When Mill Troubles Arise —CALL ON ONYX!

No matter what your problem in any process on any fabric, authoritative assistance awaits you at Onyx.

Write us, *outlining in full detail* the problem, the process, the fabric and all factors which have a bearing on the situation. Our laboratories will study the facts and send suggestions as to cause and proper remedy.

In complicated problems of processing, finishing or printing, practical field representatives and trained "troubleshooters" are ready to go into your mill to find a speedy, thorough solution.

Let our research and development laboratories work with you in developing special products for your needs.

No Obligation! No Charge!

Facilities—personnel—experience of
FOUR LABORATORIES *at your service!*

Onyx chemists and field men are "specialists on finishing materials". Their background of experience with thousands of problems in hundreds of mills, is of great value to you.

Take advantage of this technical service. In presenting your problems, remember to send complete details. It helps us co-operate more quickly and thoroughly in returning specific information for you.

ONYX OIL & CHEMICAL CO.
Specialists on Finishing Materials
Jersey City, N. J.
Southern Repr.: E. W. Klumph, Charlotte, N. C.
New England Off.: 100 Fountain St., Providence, R. I.
Midw. Repr.: Maher Color & Chemical Co., Inc., Chicago
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

Onyx LABORATORY-CONTROLLED **PROCESSING & FINISHING COMPOUNDS**

WHERE *Craftsmanship* COUNTS

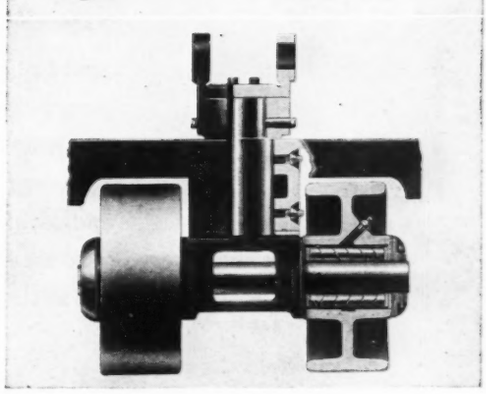
Timepieces contrived by guild watchmakers hundreds of years ago still keep perfect time today—because the guild craftsman gave his work the loving care of a doting parent! Every individual part received his unflagging, minute attention. Precise . . . Perceiving . . . Persevering . . . the perfection of the finished product was his only goal!

YALE leadership in the Hand Lift Truck field today is the result of their guidance by this same basic principle!! Broad industrial experience . . . Skilled workmanship . . . Rigorous factory tests . . . are just a few of the "craftsmen" factors that have made Yale equipment the predominant choice of the world's leading industries!!

Adaptable to a multitude of uses, YALE Hand Lift Trucks are built throughout with but a single purpose—to give the acme of satisfaction in lasting, economical service!! On the single-stroke models, a single, downward stroke of the handle suffices to lift the load! On multi-lift models, one-man effort for heavy load leverage is provided for by gear reduction of ample size!

Not an item has been overlooked to make these trucks what they are—the best in the business!!! Steering . . . Wheel Bearings . . . Release Checks . . . Every part works with the mechanical smoothness—the methodical precision that is YALE!!!

Call in one of our representatives and let him show you how YALE QUALITY TRUCKS can ease your handling problems!!



RUGGED FRONT END CONSTRUCTION—

Front wheels equipped with over-capacity roller bearings mounted on axle of high carbon chrome manganese steel. Axle key eliminates wear—hardened steel thrust washers on either side of wheels assure maximum life.

SPEED EFFICIENCY TRADE **YALE** MARK **SAFETY ECONOMY**

IN MATERIALS HANDLING

THE YALE & TOWNE MANUFACTURING COMPANY, PHILADELPHIA DIVISION, PHILADELPHIA, PA.

COOPER HEWITT ENGINEERED LIGHTING

This Glareless Light

Banishes Costly Eye Fatigue

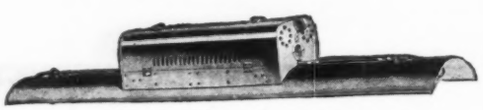
Faster, more uniform production under Cooper Hewitt light.

Maintain full efficiency, day or night, throughout the shift with detail-revealing Cooper Hewitt mercury light. The long light source practically eliminates shadows and gets down into all of the "hard-to-light" recesses of warp harnesses and other equipment.

Time saved in threading, quicker tying of broken ends, and the sharp delineation of every thread mean faster, more uniform production and, ultimately, greater profits to management. There is also an appreciable reduction in the number of rejects, for mistakes can be caught at the loom instead of in the inspection room.

Where it is important to approximate "daylight color" incandescent lamps can be combined with the mercury. Such illumination is especially valuable where color matching is of prime importance.

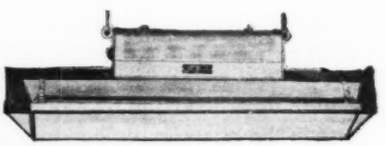
General Electric Vapor Lamp Company engineers are specialists in recommending lighting to fit the job. Write to the General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.



STANDARD COOPER HEWITT

"Better than daylight" for over 30 years.

COMBINATION MERCURY AND INCANDESCENT



For use where color is of importance.

GENERAL ELECTRIC VAPOR LAMP COMPANY

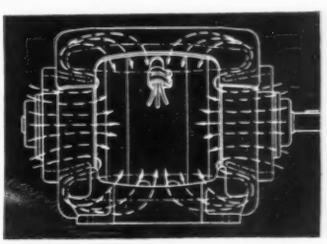
7780

"GOOD ENOUGH" ... *is obsolete!*

The Allis-Chalmers Mfg. Co. builds standard motors of every type from 1 hp. up—also motors for special application.

The ordinary, standard motor, adapted to textile usage WAS "good enough," had to be . . . because there was nothing else on the market. But with the advent of the Allis-Chalmers Quick-Clean Motor the "good enough"—the conventional motor—is obsolete.

There is only one motor on the market that has been specifically designed and built to meet the particular needs of the Textile Industry—and that is the Allis-Chalmers Quick-Clean Motor. This motor positively cleans itself and these three features of construction tell you why: (1) All working parts absolutely dust-sealed. (2) Glass-smooth inside surfaces to which lint and dust cannot adhere. (3) Big, unrestricted air-passages so that lint and dust (which you can't prevent from getting in) can easily get out again. These three features—exclusive to Allis-Chalmers Quick-Clean Motors—eliminate overheating and reduce maintenance costs to the minimum.



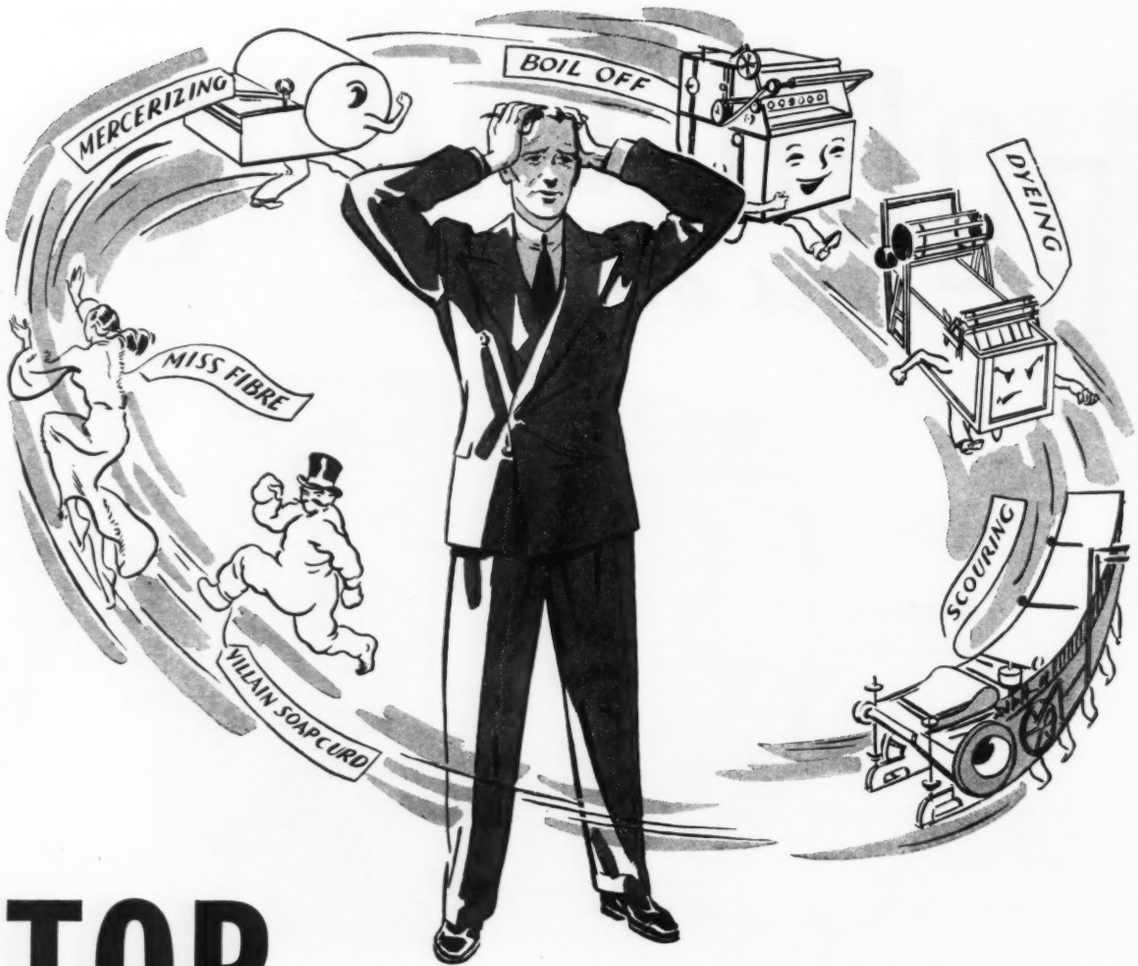
Cut-away section of motor showing internal construction. Note large, smooth, unrestricted air passages for thorough ventilation.

Available in four sizes: 5, 7½, 10 and 15 hp. Standard N.E.M.A. mounting dimensions.

MOTOR DIVISION

ALLIS-CHALMERS

MILWAUKEE WISCONSIN



STOP THIS "VICIOUS CYCLE"!

HARD WATER sets up a vicious cycle in many textile mill process operations. Take scouring, for instance. The object is to get clean fibre. But the more the fibre is washed in the hard water and soap solution, the more it collects lime soap curd. The coating of soap curd prevents the scouring from being effective. Which makes more scouring necessary. And so on.

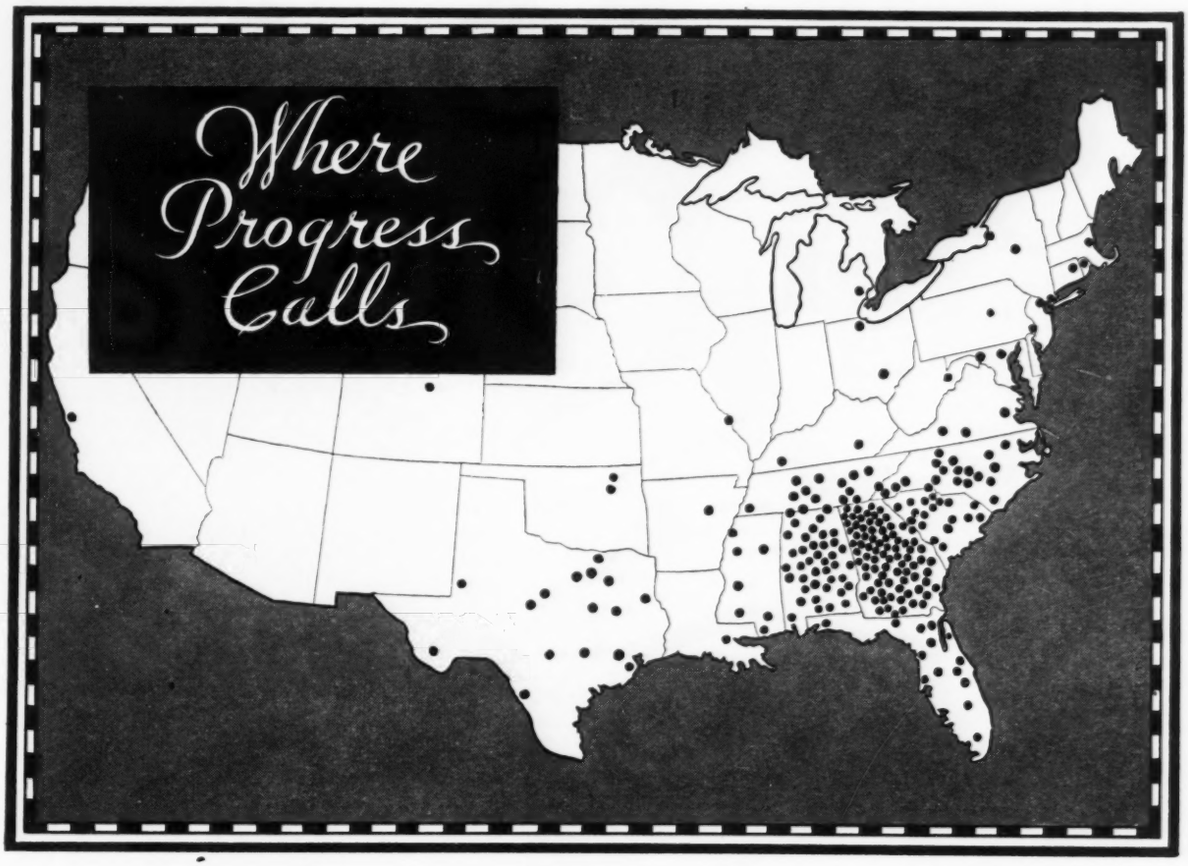
The same situation prevails in boiling off cotton, degumming silk, processing rayon. All along the line, soap curd makes trouble — prevents dyes from penetrating evenly; bleaching solutions from producing a uniform bleach; mercerizing cotton, weighting silk, and other finishing processes from producing reliable results.

Permutit Water Softening Equipment makes large savings in mill operation by eliminating the soap curd. At the same time, by preventing boiler scale it increases steam plant efficiency, steps up effective boiler capacity, reduces fuel consumption, and increases boiler availability by obviating need of untimely shutdowns for cleaning.

Improve your products, reduce your costs in process operation and steam production, and strengthen your competitive position in the industry by installing Permutit Water Softening Equipment. Write for Permutit technical bulletins showing how, why and where this equipment can save money and trouble in your plant. Write for "Reducing Textile Costs and Troubles." Address The Permutit Company, Dept.B1. 330 West 42nd Street, New York. N. Y.

Permutit

Water Conditioning



OVER a broad front of 25 states, Robert and Company has been helping the forward march of industry for 15 years. This map shows two hundred communities in which we have executed some two thousand projects of various types.

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Architects and Engineers

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AIR CONDITIONING MACHINERY
AGITATORS
BAKERS' MACHINERY
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BLOWERS
BOOKBINDERS' MACHINERY
BOTTLING MACHINERY
BOX MAKING MACHINERY
BRICK MAKING MACHINERY
CALCULATING MACHINES
CAMERAS & PROJECTING EQUIP'T
CANDY MAKING MACHINES
CANNING MACHINERY
CEMENT MAKING MACHINERY
CHEMICAL PLANT MACHINERY
CHURNS
CIGARETTE MAKING MACHINES
CIRCULATORS, AIR
CLAY MAKING MACHINES
CLEANERS, HAT
COAL MACHINERY
COKE MACHINERY
COFFEE MACHINERY
COMPRESSORS
CONVEYORS
COUPON CUTTERS
CRANES
DAIRY APPARATUS
DENTAL MACHINES
DISHWASHERS
DRIERS
ELECTRO-PLATING EQUIPMENT
ELEVATORS
EMBOSSING MACHINES
ESCALATORS
FANS, EXHAUST
FERTILIZER MACHINERY
FILLING MACHINES
FILTERS
FIRE ALARM SYSTEMS
FLOUR MILL MACHINERY
FOOD PROCESSING MACHINERY
GENERATING EQUIPMENT
GLASS MAKING MACHINERY
GRINDING MACHINERY
HAT MAKING MACHINERY
HOISTS
HUMIDIFIERS
HYDRAULIC MACHINERY
LAUNDRY MACHINERY
LEATHER MAKING MACHINERY
LOOMS, TEXTILE
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DRILL PRESSES
PUNCH PRESSES
SHAPERS
GRINDERS
BORING MILLS
PLANERS
LATHES
SHEARS
BLANKING PRESSES
ETC.
MARINE MACHINERY
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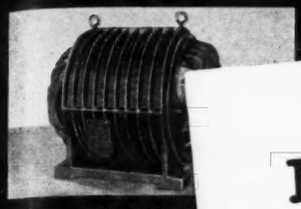
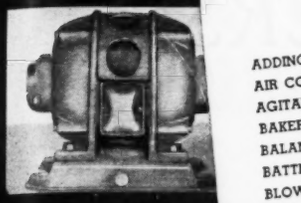
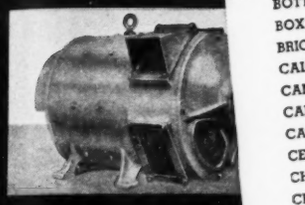
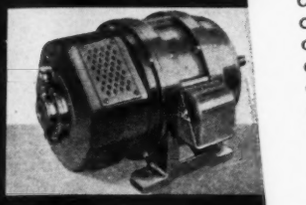
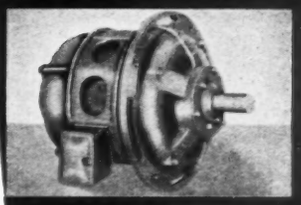
MINING MACHINERY
MIXERS
MOTOR-GENERATOR SETS
OFFICE APPLIANCES
OIL BURNERS
OVENS
PAINT MAKING MACHINERY
PAPER MAKING MACHINERY
PETROLEUM PRODUCTS MACH'Y
PHONOGRAPHS
POLISHING MACHINERY
POWER PLANT MACHINERY
POWER TABLES
PRINTING MACHINERY
PULVERIZERS
PUMPS
RECORD CHANGERS
RECORDING INSTRUMENTS
REFRIGERATING MACHINERY
RUBBER MAKING MACHINERY
SCALES
SEPARATORS
SEWING MACHINES
SHOE MAKING MACHINERY
SMELT'G & REFIN'G MACH'Y
SOAP MAKING MACHINERY
STOKERS, MECHANICAL
STONE WORKING MACHINERY
SUGAR REFINING MACHINERY
TABULATING MACHINES
TESTING MACHINES
TEXTILE MACHINERY
TYPEWRITERS
UNIT HEATERS
VACUUM CLEANERS
VENTILATING EQUIPMENT
WASHING MACHINERY
WEIGHING MACHINERY
WINCHES
WOODWORKING MACHINERY
WRAPPING MACHINES

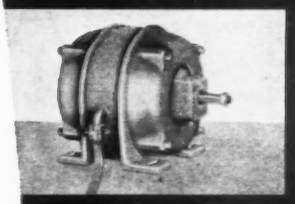

CHEMICAL PLANT M

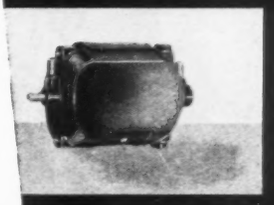

CRANE AND HOIST MOT

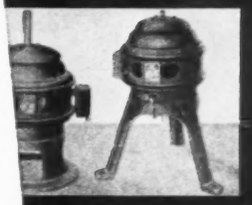

DIRECT CURRENT MOTORS TYPE K

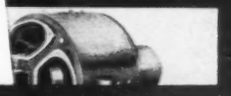

SLIP RING MOTORS


FLANGE TYPE MOTORS

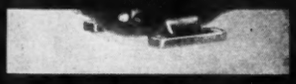

TEXTILE LOOM MOTORS

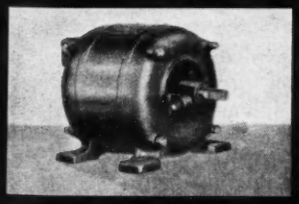

D. C. UNIVERSAL MOTORS

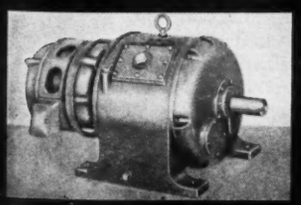

TICAL TYPE MOTORS



Benefit by our Experience

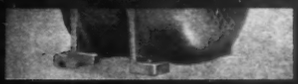

REPULSION START INDUCTION MOTORS


SPLIT PHASE FRACTIONAL HORSEPOWER MOTORS

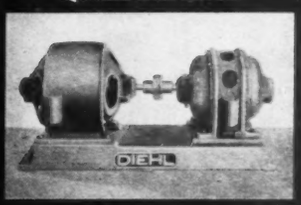

GEAR MOTORS

THE same facilities and abilities which have enabled Diehl to design and produce motors that meet all Singer Sewing Machine requirements and those of many equally exacting manufacturers in other fields, are available also to you. The broad line of standard Diehl motors makes it possible to offer a motor exactly suited to practically any specific requirement—and special designs are obtainable for meeting exceptional conditions. Diehl motors embody the newest approved engineering advances and sustain the quality standards which Diehl products have maintained for half a century.

The "Diehl Simplified Price List and Catalog" is proving extremely helpful to all who choose and use motors. Write for your copy.


TOTALLY-ENCLOSED FAN COOLED SQUIRREL CAGE MOTORS

GENERAL PURPOSE SQUIRREL CAGE MOTORS



MOTOR-GENERATOR SETS

DIEHL MANUFACTURING CO., Elizabethport, N. J.

Electrical Division of THE SINGER MANUFACTURING CO.

ATLANTA BOSTON CHICAGO DALLAS NEW YORK PHILADELPHIA

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The articles created such interest and favorable comment among the industry, and there was such a demand for extra copies, it was decided to produce them in book form. The material is unique in literature on this subject and provides a source of information and experience to the operating executive which is fresh, up-to-date, practical and usable in every-day finishing plant operation.

The book covers, generally, those basic raw materials used in the finishing processes for cotton piece goods. It includes a number of the new materials and practices which cannot be found in any standard textbook.

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COTTON

Serving The Textile Industries
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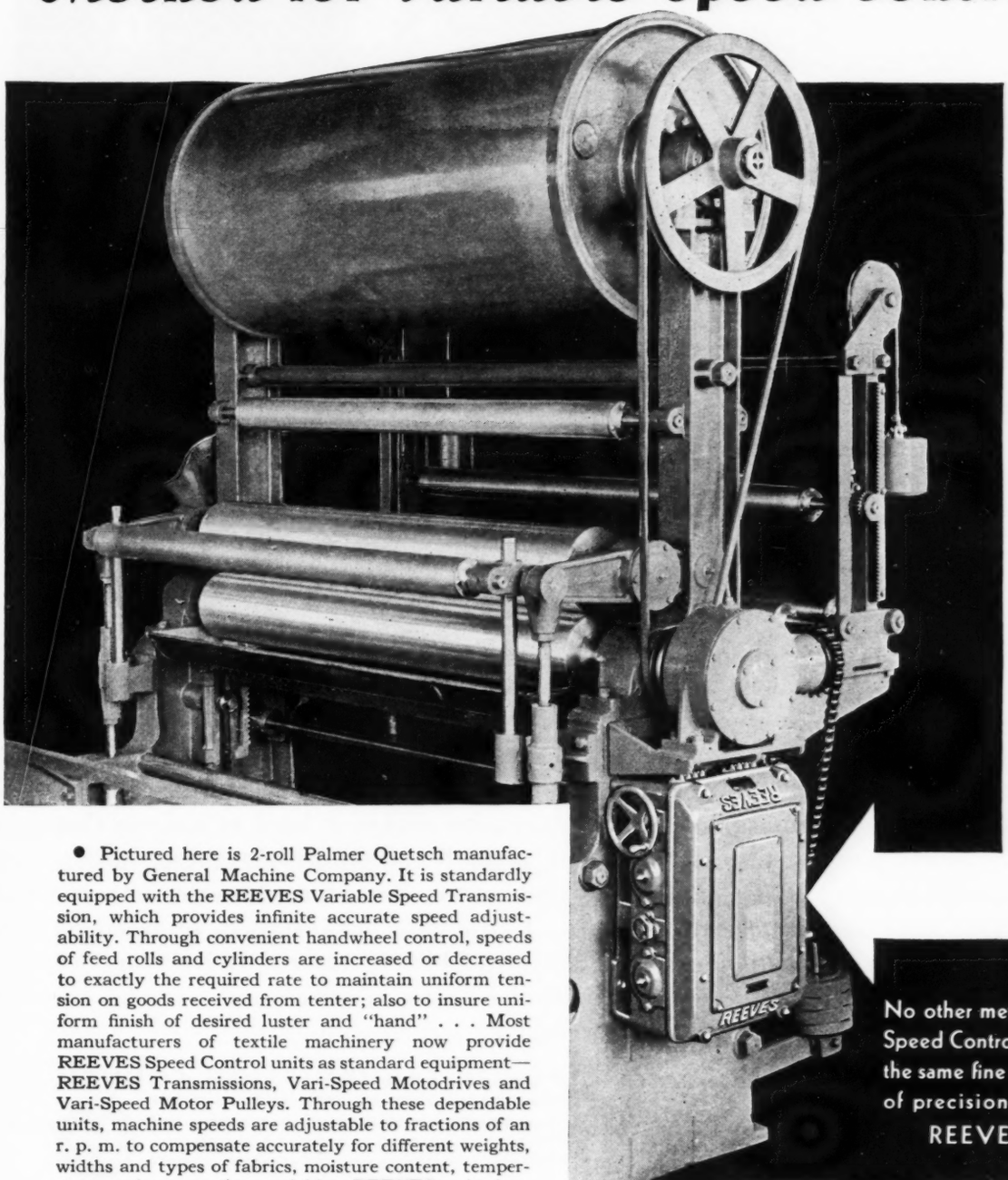
GRANT BUILDING ATLANTA, GA.

TEXTILE INDUSTRY'S *Approved* *Method for Variable Speed Control*



No other method of Speed Control offers the same fine degree of precision as the REEVES.

• Pictured here is 2-roll Palmer Quetsch manufactured by General Machine Company. It is standardly equipped with the **REEVES** Variable Speed Transmission, which provides infinite accurate speed adjustability. Through convenient handwheel control, speeds of feed rolls and cylinders are increased or decreased to exactly the required rate to maintain uniform tension on goods received from tenter; also to insure uniform finish of desired luster and "hand" . . . Most manufacturers of textile machinery now provide **REEVES** Speed Control units as standard equipment—**REEVES** Transmissions, Vari-Speed Motodrives and Vari-Speed Motor Pulleys. Through these dependable units, machine speeds are adjustable to fractions of an r. p. m. to compensate accurately for different weights, widths and types of fabrics, moisture content, temperature and many other variables. **REEVES** units in a wide range of sizes, speed ratios and controls are easily applied to machines now in use in cotton, wool, silk and rayon production. **REEVES** engineers are at your service to work out any application.

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If you have not installed, or arranged to test, "P.T.C. Energy Drive" for "X" Model looms, write or wire us today for further information.

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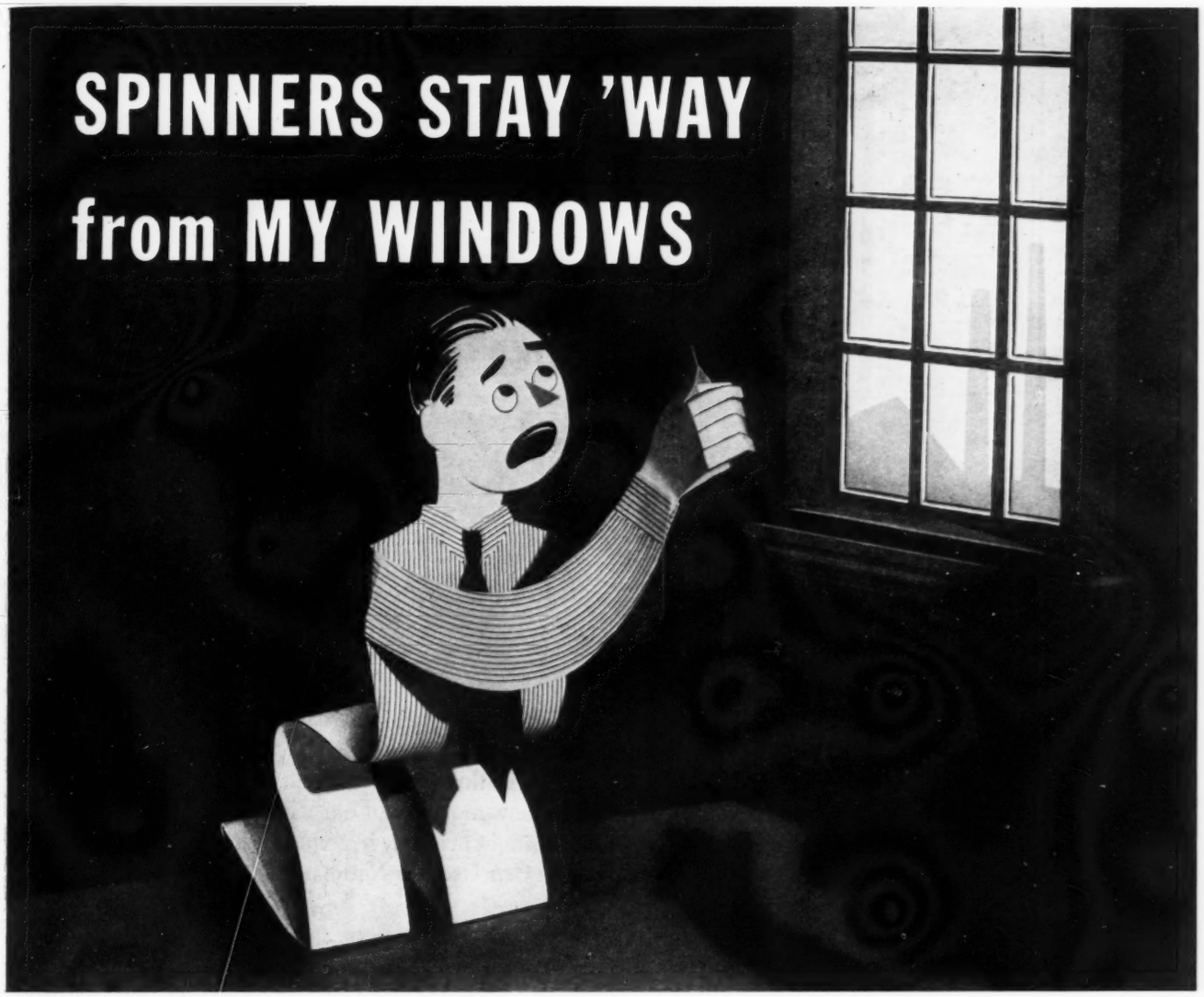
A research association of producers and distributors of power, power units and mechanical equipment for transmitting power.

Write or wire for further information

MODERN GROUP DRIVE

—the *new* efficient and economical way of transmitting power to machines

SPINNERS STAY 'WAY from MY WINDOWS



When you install a Parks Cramer Automatic Airchanger you close your windows and *keep them closed.* You break the window-lust of your spinners —do away with the open windows that cause lower humidity, spotty conditions, ends-down, seconds, *losses.*

With a Parks Automatic Airchanger you feed your spinning and weaving rooms a balanced diet of good-production weather . . . constant humidity evenly distributed with maximum cooling. And by so doing, you improve quality and rate of output and lower excessive summertime temperatures.

The truth is that with a Parks Automatic Airchanger you get the same uniform air-conditioning that you get with a central station — but at a lower cost. The air-changer is designed to be used with your present humidifying system. You scrap no equipment—simply put in an addition. You make a reasonable investment that pays for itself in savings. Send coupon for full information. No obligation, of course.

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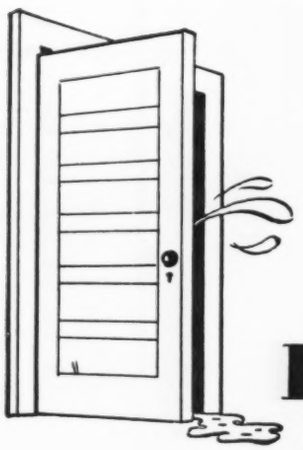
Gentlemen: Please send me Booklet 235 on the Parks Automatic Airchanger ☐ You may have an engineer call ☐ (Please check)

Name .....

Company .....

Address .....

City ..... *State* .....



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bring it to us!

THE purpose of the National Better Business Bureau is to provide a means through which business can itself correct many of the national advertising and selling abuses which might otherwise be left to law and legislation.

Occasionally it becomes necessary for the Bureau to refer its files to the proper law-enforcement agency, after its own efforts have not succeeded. But in the great majority of cases the Bureau gets results by friendly suggestion and sound reasoning.

The Bureau has no enforcing power, yet hundreds of cases every year show how national advertisers have cooperated with us of their own free will, in the correction of practices that were damaging to public confidence in advertising.

You never hear about these cases, because they are known only to the Bureau, the complainant, the advertiser questioned and his agency, and sometimes to a publisher.

Our facilities, which are available to business and the public without charge of any kind, are made possible through the voluntary support of business. To know more about our widespread service and how you might profit by it, send for the free booklet, "How You Can Use the National Better Business Bureau."

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WHO SUPPORTS THE BUREAU?—The National Better Business Bureau is a non-profit corporation maintained by more than 600 firms which believe that business should defend itself against practices that destroy public confidence. The Bureau has no other source of income. It is supervised by a Board of Directors elected by the membership and serving without compensation. It is operated by a staff of experienced executives who have no other business connections.

National Better Business Bureau, Inc.

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*Name*_____

*Firm Name*_____

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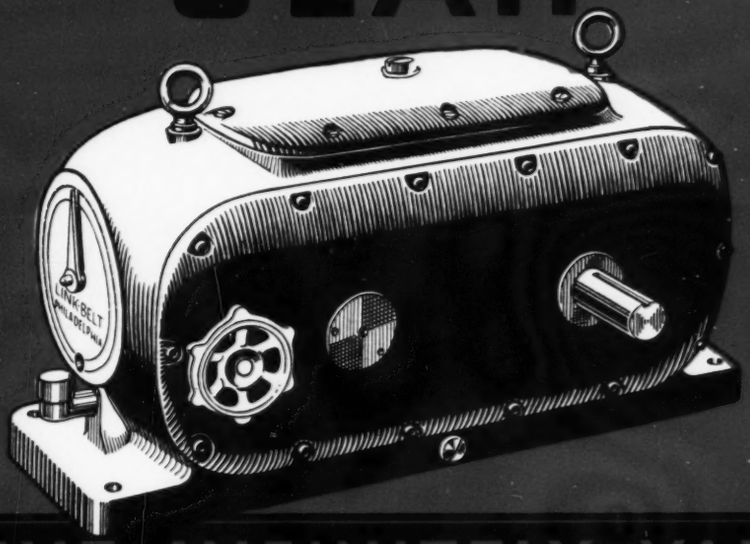
LINK-BELT

P.I.V.

GEAR



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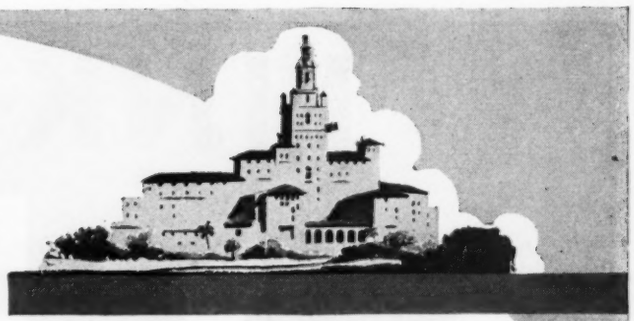

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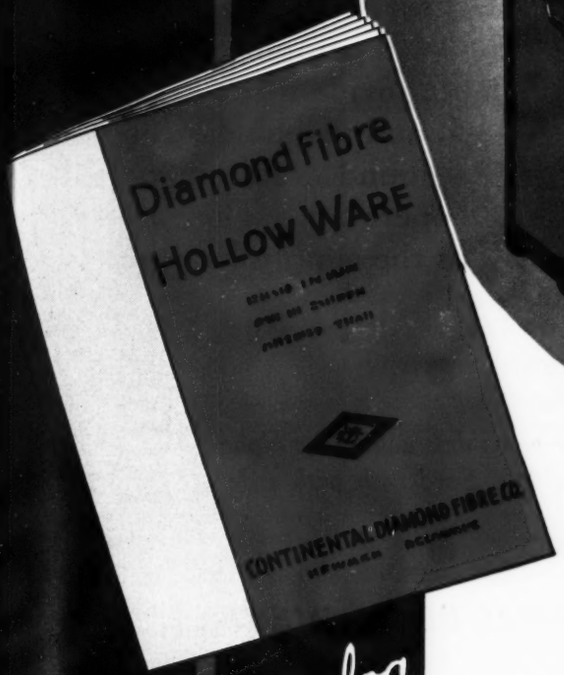

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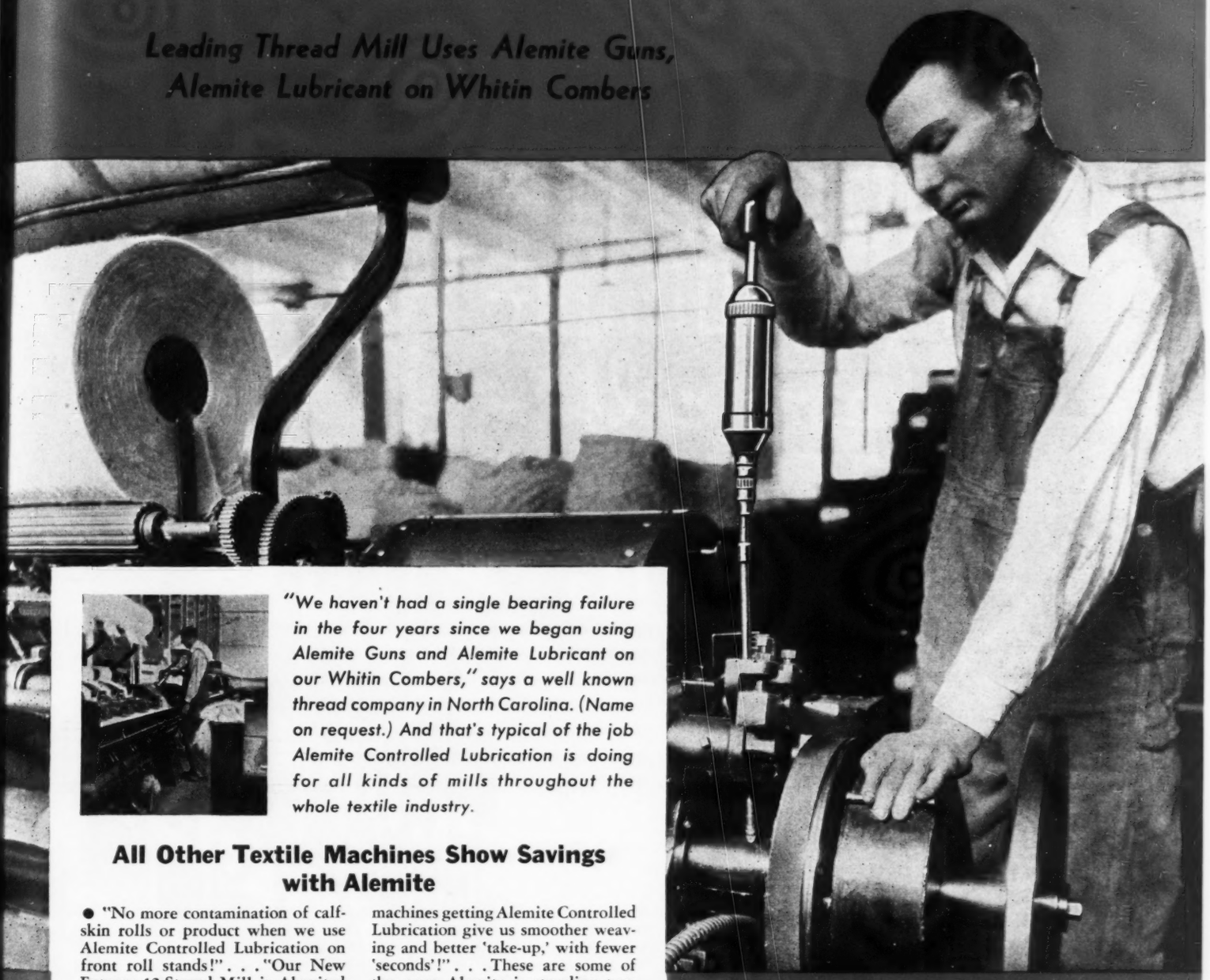

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COTTON

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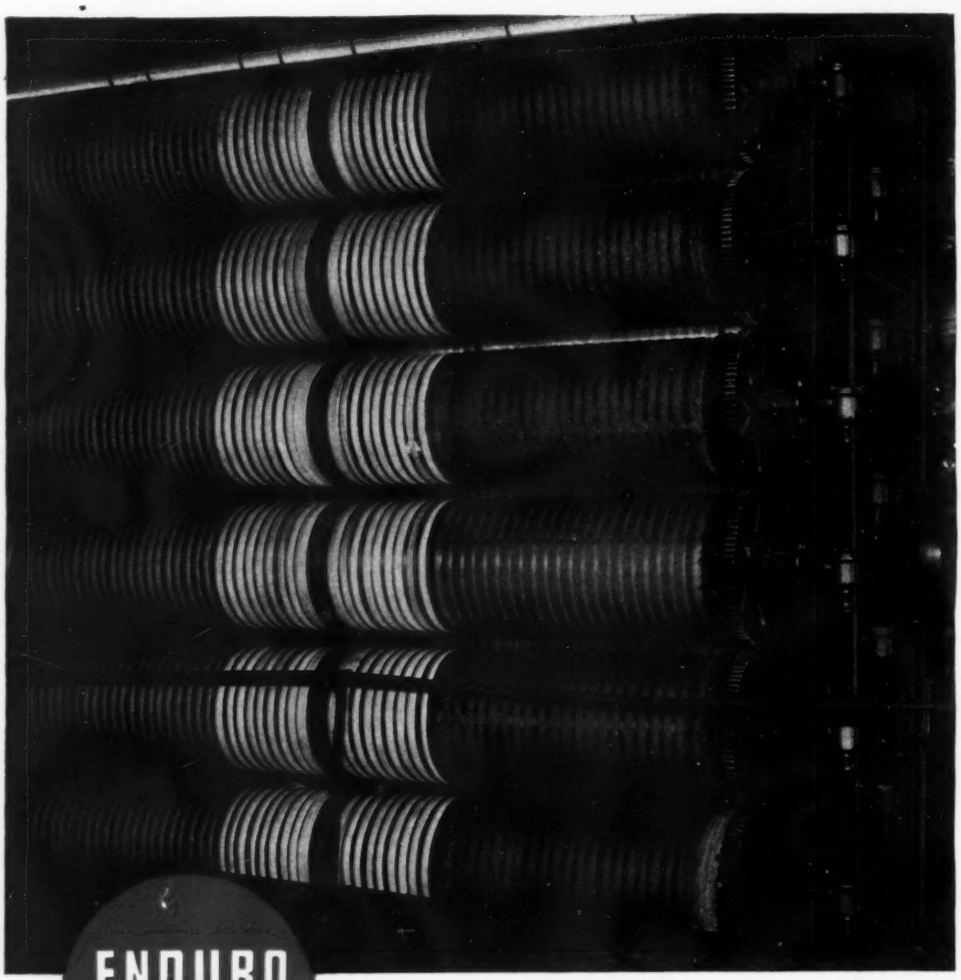

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Vol. 101
No. 3

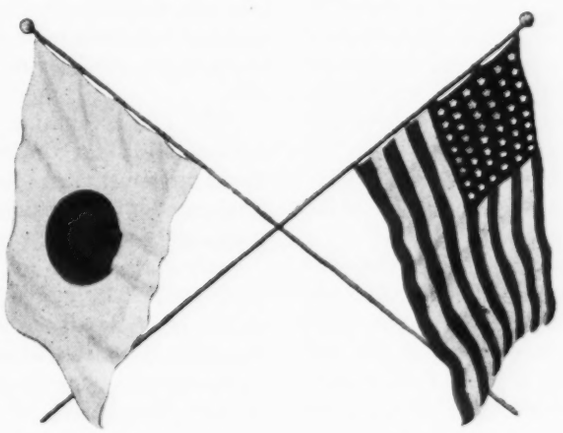
COTTON

March,
1937

The Broader Significance of the Japanese Quota Arrangement

THE ULTIMATE significance of the successful negotiation of the voluntary quota limitation by the Japanese textile industry of their cotton-textile exports to the United States transcends the particular industry immediately affected. In its conception and effectuation, it represents a new and constructive step in international trade relations.

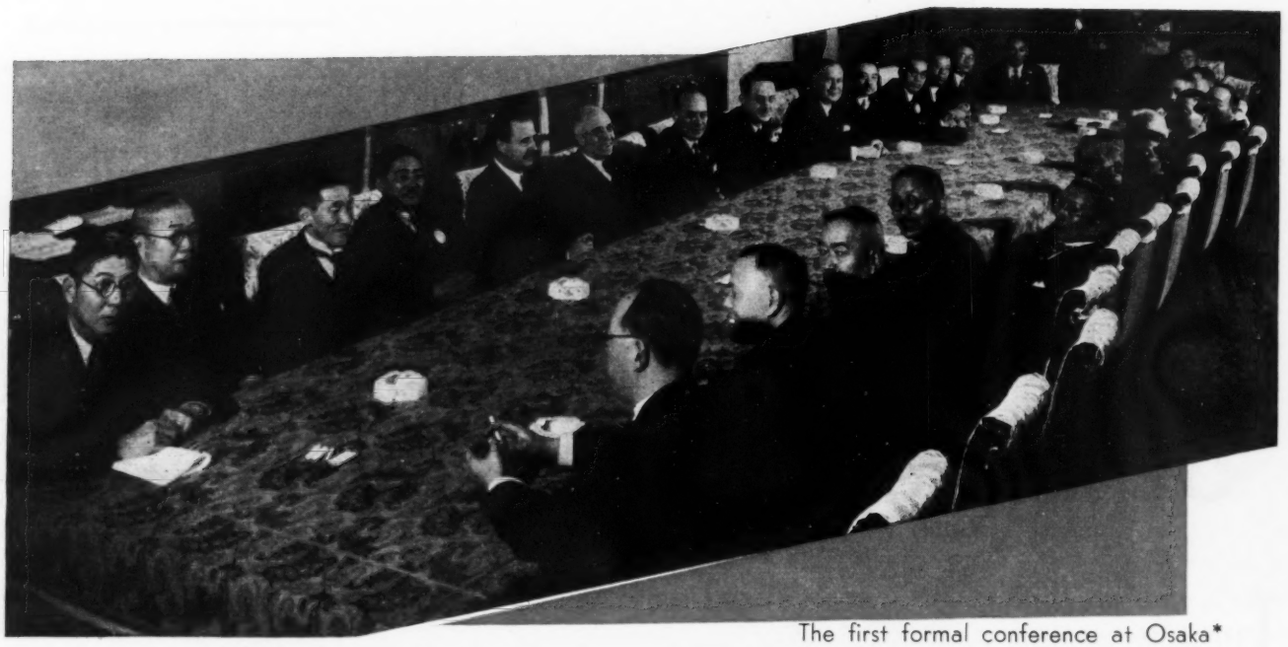
The understanding brings to the American cotton-textile industry unquestionable benefits of an immediate and tangible nature. There has been growing in the American industry during the past three years, a state of uncertainty and instability, as the imports of Japanese textiles into America increased at such a rapid rate as to threaten the American industry itself. The establishment of the voluntary quota for 1937 and 1938 definitely fixes the amount at a figure which removes a major dark cloud of uncertainty and threat and eliminates the potential damage to the American mills. The very fact that the amount is fixed is more essential to this point than the figure at which it was set. The arrangement also dissipates fear and uncertainty in forward purchases of American textiles which hung over the market, ominously and in markedly increasing degree, as the threat of increasing Japanese imports gained such startling momentum and force.



It will serve, furthermore, as an altogether heartening and constructive influence in the preservation of America's internal program of economic improvement and in the maintenance of the textile industry's higher standards, by removing the threat to that structure which came in the increasing flood-tide of imports from the outstanding low-cost nation into the highest-cost nation of the world.

And to the Japanese industry there are advantages not immediately apparent in the light of the benefits to the American industry itself. The understanding is one which should prove to be, not one-sided in the American favor, but mutually profitable and beneficial, as all true understandings should be. The wisdom of the Japanese representatives in meeting the recommendations of the American mission makes unnecessary, under the proper execution of the arrangement, the application of restrictive and discriminatory measures against Japanese goods, a sometimes necessary though unpleasant action that invariably brings retaliation and abuse. A very concrete result of definitely fixing a "ceiling" to the amount will be an improvement in the sale price of Japanese goods in this country, and hence a better net profit for Japanese mills. It will also mean that the better type of distributors in the United States, relieved now of the fear of discrimination and criticism applicable to uncontrolled distribution of Japanese fabrics, will be more readily receptive to handling these goods, and will replace in degree the unsatisfactory, undignified selling of Japanese products by the adventurous, fly-by-night distributor, who has been a major element in Japanese representation.

But much broader in importance, significance and permanent value is the wholesome effect of this understanding upon the whole subject of relationships—trade, social and political—between these two great nations of the West and the East. This voluntary understanding, negotiated entirely between the industries themselves, the acceptance by the Japanese of the principle of quota limitation on textile specialties such as bedspreads, table-cloths, etc.—products made from piece goods—sets the pace for similarly amicable and mutually profitable settlement of difficulties in many other industrial and commercial fields. Achieved in the face of skepticism which prevailed generally in both countries, executed in an atmosphere of friendly understanding and good will, without a tinge of acrimony or bitterness, it is at once a tribute to the doctrine of good will and wise industrial statesmanship, a solution of a difficult common problem, and a contribution to international trade relationships, harmony and concord.



The first formal conference at Osaka*

The Story of the Japanese

By Robert W. Philip
Editor of "Cotton" and Secretary of the American Textile Mission

THE American Textile Mission to Japan marked a new era in international trade relations by securing adoption on the part of the Japanese textile industry of a voluntary quota limitation on the amount of cotton piece-goods to be exported to the United States during 1937 and 1938. The arrangement, to the best of our knowledge unprecedented in trade history, was effected as a result of a series of conferences held between the American commission and representatives of the Japanese textile industry, in Osaka, Japan, from January 15 to 22 inclusive, 1937.

In brief, the features of the voluntary arrangements are:

(1) The acceptance by the Japanese of the principle of quota limitation as the most practicable means of arriving at a satisfactory settlement.

(2) The figures of the quota themselves, the Japanese agreeing to limit their shipments of all types of cotton piece goods to the United States during 1937 to a maximum of 155,000,000 square yards or the volume of contracts on hand on January 21, 1937, whichever amount is the smaller, and to limit their shipments for 1938 to a maximum of 100,000,000 square yards.

(3) The establishment of a joint committee consisting of an equal number of representatives of each of the two industries, not later than April 1, 1937, to deal with whatever administrative difficulties may arise in connection with existing quota arrangements and to act as a negotiating committee in the establishment of subsequent arrangements between the two industries relative to quantity limitations or other means of control.

(4) The acceptance by the Japanese group of the principle of quota limitation as regards table cloths, bed spreads, handkerchiefs, cotton gloves, underwear and other specialty items manufactured from cotton cloth, and yarn or threads; and their pledge to undertake to institute negotiations looking toward such quota arrangements on these fabricated products prior to June 30, 1937, or as soon thereafter as is practicable.

(5) The acceptance by the Japanese of the entire responsibility for the attainment of the objectives of the arrangement, and the obligation on their part being predicated "on considerations of good faith rather than on those of contractural and technical character."

(6) Agreement by the Japanese to deduct from their 1937-1938 quotas the amount of trans-shipments of goods of Japanese origin from third countries to the United States, should such trans-shipments tend to render the purpose of the arrangement ineffectual.

(7) The belief of the American representatives that the application of these principles and procedures will "render unnecessary any action on the part of the United States government looking toward further restriction of Japanese cotton-textile imports," and as laying the ground-work "for a reciprocal trade treaty between the governments of the two countries" and thus making possible "tariff adjustments which will be of mutual advantage to the two countries."

The other details of the understanding include the definition of cotton piece goods "as inclusive of all woven piece goods, the principal material of which is

*The five members of the American group, starting with Mr. Bailey, fifth from the left end, are seen in the center on the far side of the table. After this first conference, the Japanese delegation was voluntarily reduced to five members for the remainder of the negotiations.

Trail's End—signing the document at Osaka*

Textile Quota Arrangement

THIS is a first-hand report of the delegation's arrangement with the leaders of the Japanese textile industry for a voluntary quota principle applied to imports of Japanese fabrics into this country.

cotton"; the use of the official data of export shipments as compiled by the Japanese government for measuring shipments; exclusion from the arrangement of cotton goods already covered in existing agreements, and of piece goods imported into the United States and then re-exported.

Personnel of the Committees

The American group was composed of Dr. Claudius T. Murchison, president of The Cotton-Textile Institute, Inc., New York City; Donald Comer, president of Avondale Mills, Birmingham, Ala., and president of the American Cotton Manufacturers Association; Cason J. Callaway, chairman, Callaway Mills, LaGrange, Ga.; Harry L. Bailey, president of Wellington, Sears Company, New York City; and Robert W. Philip, editor of COTTON, Atlanta, Ga., secretary. Hervey Kent, treasurer, Exeter (N. H.) Manufacturing Co., the designated representative of the National Association of Cotton Manufacturers, was unavoidably prevented from making the trip.

The Japanese delegation with whom the conferences were held was headed by Otokichi Shoji, president of Toyo Cotton Spinning Co., Ltd., and president of the Japan Cotton Spinners' Association, which contains in its membership more than 98 per cent of the spindles in Japan; Saburo Nango, president of Japan Cotton Trading Co., Ltd., and president of the Cotton Yarn and Cloth Exporters' Union, and of the Japan Cotton Yarn & Piecegoods Exporters' Association for America; and the heads of the Nippon Union of Cotton Textile Manufacturers' Associations, and of the Japan Cotton Merchants' Union.

On the trip, Mr. Callaway was accompanied by Mrs. Callaway and their two sons, Cason, Jr., and Howard; Mr. Comer by Mrs. Comer and their daughter, Martine; and Mr. Bailey by Mrs. Bailey. The Comers and Callaways left Japan from Kobe on January 22 for Shanghai, and Mr. and Mrs. Bailey sailed from Kobe on the same date for North China. Dr. Murchison and the secretary returned directly to the United States on January 28.

Back of the conference and of the successful achievements recorded in the foregoing factual account, is a story of the conditions that resulted in the mission, of its conception, preparation and execution which justify some interpretation and comment, with observations on some of the many interesting angles to this achievement.

A Review of the Background and Preparation

Prior to the inauguration of NRA, and the application of its Code No. 1 to cotton-textiles, in 1933, with the consequent tremendous increase in production costs coming from the shortened hours of work and increased wages, exports of textiles from Japan to the United States had been relatively unimportant in volume and effect upon the American market. But this new condition, together with a condition of overcapacity and intense competition within the American industry, opened the gates to the American consuming markets to Japan, and from a gross of less than 2,000,000 yards in 1933, Japanese exports of textiles to this country jumped to 16,000,000 yards in 1934;

*This event occurred on Sunday evening, January 24, the conferences having begun on January 15. Dr. Murchison and Mr. Shoji are shown affixing their signatures to the document agreed upon. Mr. Nango and Mr. Philip are seated with Dr. Murchison. Mr. Okada and Mr. Tsukada are on Mr. Shoji's right.

to more than 36,000,000 yards in 1935; and to approximately 75,000,000 yards in 1936. Dependable trade reports toward the end of 1936 made it clear that the amazing rate of increase was continuing and indicated that the first quarter of 1937 would undoubtedly witness a volume exceeding the total of 1936. These startling figures did not include imports of products fabricated from cotton yarns and piece goods, whose volume would undoubtedly equal that of piece-goods themselves.

The immediate effects of this tremendously sharp increase in Japanese imports were the threat to the American price structure and the uncertainty and instability created in the American market; the burden of the shock being temporarily absorbed by certain divisions of the industry wherein the Japanese shipments had been concentrated, notably in bleached goods.

There was clearly apparent in 1936 a definite trend into other divisions of American production, with unmistakable evidence that unless some steps of regulation were taken, Japanese shipments of cotton goods could and would penetrate readily into the other branches.

The American tariff was inadequate against these inroads of Japanese goods. When an attempted negotiation for a gentlemen's agreement for limitation, initiated by the United States Department of State and the Japanese government collapsed because of misunderstanding on the part of the Japanese industry, with the resultant increase by the President of the tariff rates on certain textile commodities from Japan by an average of 42 per cent, Dr. Murchison, president of the Institute, conceived the plan for direct discussion with Japanese textile interests of a basis for solution of the problem.

Careful and thorough plans were made for the mission, everything being done with the full knowledge and assistance of the Department of State and the Japanese Embassy, but it was emphasized throughout the preparations and conferences in Japan, that the negotiations were of a wholly private character, although both governments gave the mission their unofficial approval and endorsement.

The commission met in San Francisco and sailed for Japan on December 24 on the NYK ship, the *Chichibu Maru*. The members left the United States amid an atmosphere of skepticism and doubt on the part of most of the industry as to the possibility of successful achievement. Arriving in Japan on January 8, five days were spent in Tokyo, with a number of functions tendered by outstanding trade bodies, and conferences with the American Ambassador and other American officials. In Tokyo the American party met with the utmost courtesy and hospitality, but encountered here an atmosphere of skepticism on the part of Japanese and American businessmen and officials alike.

The Conferences Begin

On January 13 the group went to Osaka, the center of the Japanese textile industry. There was a formal reception on January 15, and seven formal conferences with the Japanese committee, preceded and interspersed by receptions, dinners and other entertainment. All conferences were bi-lingual; the remarks of the American delegation being translated into Japanese by Ichiro Kawaguchi, secretary of the Japan Cotton Spinners' Association; and the statements of the Japanese being translated into English by Gentaro Okada, managing director of a group of Japanese mills.

◆ ◆

ARRIVAL AT OSAKA—Japanese ladies in native costume presented the American ladies with flowers upon arrival at Yokohama, Tokyo and Osaka. Left to right: S. Yamasaki, secretary of the reception committee, Dr. Murchison, Mrs. Callaway, Mr. Philip, Mrs. Comer, Miss Comer, and Mrs. Gentaro Okada . . . . .

◆ ◆

It is difficult for me, having lived with the American group throughout the entire trip, and having sat in their private meetings and the formal sessions with the Japanese, to remain objective in this report, and it is equally difficult to remember my dual occupation as secretary of the mission and as a magazine reporter, and the distinctions to be drawn. Because I was a witness to a dramatic and historic proceeding, furthermore, it is difficult to obey the demands of space and refrain from a detailed account of the conferences which eventuated in the understanding. The complete verbatim transcript of the proceedings is in the hands of the Institute; a rather complete record, reviewing the entire trip and summarizing the discussions, is available to the industry, however.

Substantially, it can be said, too briefly, that Dr. Murchison, as chairman of the American group, carried the load of presenting the case, being ably as-

sisted, in its preparation and presentation, by Cason Callaway, Harry Bailey and Donald Comer.

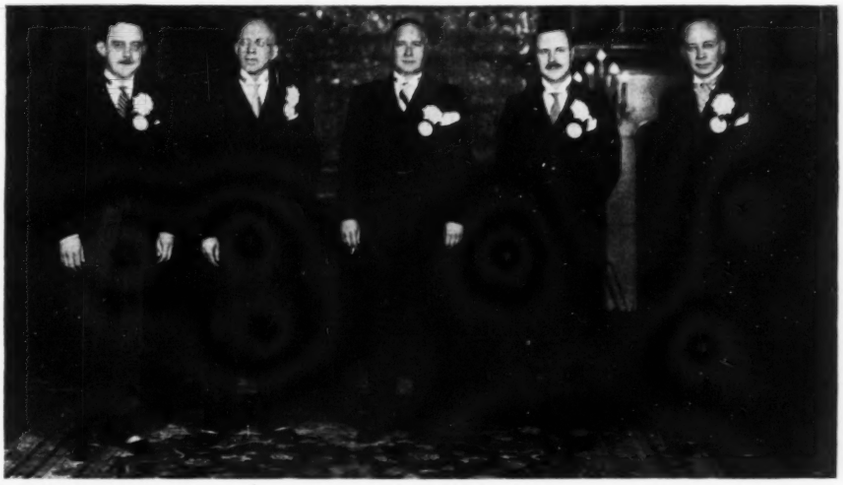
The procedure was the presentation, by the Americans, first, of the prevailing conditions within the American industry, and the startling increases in Japanese imports into this country during recent years and their prevailing effect and impending threat to the higher standards instituted by the NRA code and subsequently maintained by the majority of the industry. The jealousy with which these conditions are cherished by American industry and government and public opinion alike was firmly, but gracefully impressed.

At the same time the broad foreign or external policy of this country was described, with its ideals of trade liberalization, and a reduction of tariff barriers in all countries through reciprocal trade treaties. Perhaps the most striking feature of a masterful presentation by "the American side," as we were designated over there, was an adroit and perfectly lucid refutation by Dr. Murchison of an apparent inconsistency between our internal policy of higher costs of manufacture through higher wages and shorter hours and our external policy looking toward the lowering of protective tariff walls not only for our own industries but for other countries as well. After emphasizing that the United States is strongly determined to guard her new internal program of higher standards, and pursue her foreign policy as well, he explained that America's higher cost situation has not imperiled the import situation as regards any other country except those in the Far East, especially Japan, and that the danger is in the changing character of our trade with Japan. "In the past our trade with Japan has been what we call reciprocal; it is a natural arrangement highly satisfactory to both countries, we purchasing silk and certain other commodities not highly competitive in character, Japan purchasing cotton, petroleum, scrap iron and certain other commodities which are not highly competitive, and from the standpoint of both countries I think it was a trade arrangement thoroughly happy in its composition.

"If the goods which compose that trade volume change in proportion so that an increasing number of those goods compete with an American industry which is fully developed and adequate to take care of the home market, then you find beginning for the first time a feeling of international rivalry; it was in recognition of this one point that we felt we should come over and explain our problem to you. * * * It is unthinkable that we could give up our internal program. It is equally unthinkable that we could surrender wholly our foreign trade policy. I believe the only compromise would be special legislation to meet special cases and that is highly undesirable because such action always implies discrimination. * * *"

The Proposal Is Made

The first two sessions were occupied with the presentation of the situation by the American group, and a reply by Mr. Nango of the Japanese committee, following which Chairman Shoji asked Dr. Murchison to submit a proposal for a solution to the problem. At the third session, held on Tuesday, January 19, Dr. Murchison presented the principles of the American proposal—a voluntary quota arrangement—declaring this method to be preferred "by both our government and ourselves to any resort either to legislation or to the powers of the president."



RECEPTION IN OSAKA — The American group in formal morning dress at the reception at Mengyo Kaikan, Osaka. Left to right: Messrs. Philip, Comer, Callaway, Bailey, and Murchison. The formal conferences of the two committees were held in this club building . . . . . .

The Japanese group readily accepted the principle of quota limitation, but demurred at its application to all types of piece goods, it being explained that an arrangement on bleached goods and mulls was possible immediately, but that on all other fabrics, consultation with a large group of widely scattered small associations was necessary. The American group was adamant in its stand that any negotiation must include all piece goods, and that is the explanation of the clause in the memorandum permitting the Japanese group time to consult with the other associations interested. (On February 10, aboard the *Taiyo Maru* en route home, Dr. Murchison received advice from Mr. Shoji that all associations had unanimously accepted the terms as proposed, making the limitation applicable to all piece goods.)

It was at the next conference that it was revealed that orders already in hand for Japanese shipments to the United States in 1937 totaled approximately 155,000,000 square yards, a large proportion of which had been booked by Japanese mills prior to Decem-

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ber 5, 1936, on which date Japanese manufacturers ceased taking orders on bleached goods for future delivery in recognition of the mission's proposed visit. This amount (or the existing contracts for delivery in 1937, whichever figure is the smaller) was finally set as the 1937 quota, and the basic quota for 1938 was set at 100,000,000 square yards. However, in recognition of the fact that the 1937 quota of existing orders would preclude additional bookings for the remainder of the year, and thus eliminate from the 1937 American market those Japanese mills which did not participate in the tremendous increase in sales just prior to the agreement, the Japanese were granted the option of transferring not more than one-fourth of the 1938 quota to 1937. If this option is exercised, the maximum shipments for 1938 will not be more than 75,000,000 yards, or approximately the total amount of 1936 Japanese imports. In either event, the 1938 quota represents a definite decrease from the 1937 figure, the amount of which was determined by orders already in hand before the negotiations were concluded.

The seventh and final conference, starting at midnight, January 21, was concluded at 2:22 A. M., January 22; during this session the final details of the arrangement were worked out. Messrs. Callaway, Comer and Bailey sailed at noon on that date, Dr. Murchison and the secretary remained to complete the final draft of the document, which was formally approved and signed by Mr. Shoji and Dr. Murchison at 6:00 P. M., on January 24.

Some Interpretations

Reverting to the arrangement itself, the figures adopted have been interpreted. Equally important is the acceptance by the Japanese of the *principle* of quota limitation.

As stated, the document definitely fixes the full responsibility for the attainment of its objectives on the Japanese industry. Other details concerning the execution of the understanding—the use of the official data of export shipments and the omission of fabrics included in existing agreements—are self-explanatory. The definition of cotton piece goods as inclusive of "all woven piece goods, the pricipal material of which is cotton", will solve any problems as regards rayon-and-silk and woolen-and-cotton mixtures.

Agreement by the Japanese to subtract from their quotas any amounts of trans-shipments through third countries, if these tend to render the arrangement ineffectual, and the accompanying offer of the American commission to supply necessary information to that end, should obviate administrative difficulties on this point which developed in the Philippine "gentlemen's agreement."

The exclusion from the quotas of piece goods which have been imported into the United States en route to their final destination elsewhere and then re-exported is obviously fair since such shipments do not affect the American market.

What It Means

For the American industry, the understanding achieved means the solution of the presence and potential threat of uncontrolled Japanese imports, their influence upon the domestic price structure, and the resultant uncertainty and instability and fear as regards forward commitments.

For the Japanese industry, the application of a quota will unquestionably mean better prices, as there will now be less competition among sellers of Japanese goods; it will mean that Japanese goods may enjoy a much higher type of distribution and a more scientific procedure of price making—resulting in a wider margin of profit. To both industries, and to both countries, it means the settlement of a problem that was dangerous in its implications, and the laying of groundwork for the further fostering and extension of harmonious trade relationships between the two countries.

To the American committee, individually and as a group, it means the confirmation of its belief from the beginning that such negotiations could be brought to a mutually successful and profitable achievement; and the accomplishment of the objectives despite a rather general frank and honest skepticism is a reward and tribute to the far-sighted and wise planning and execution of the committees representing both the American and the Japanese industries.

As an observer, I am happy to report that throughout the entire proceedings, all of the discussions were conducted on the highest plane of courtesy and mutual understanding, without the slightest trace of acrimony, bitterness, and without sharp exchanges. The attitude of the Japanese representatives was always one of genuine, friendly hospitality, and of mutual understanding and a common desire for the best solution of a mutual problem. Differences of opinion there were, to be sure; and there were a number of genuinely tense moments, sometimes distressingly tense, just as there always are in any important negotiations. But through it all, and above all, there was an atmosphere of real friendship and

understanding, typical of earnest men seeking the solution of a problem, and prophetic of the broad significance of the understanding reached in these conferences—the improvement and furthering of industrial good-will and understanding between the two industries.

Reception to Dr. Murchison

On Thursday evening, January 25, the Textile Square Club of New York City tendered a reception and dinner in honor of Dr. Murchison as chairman of the commission, at the Hotel McAlpin in New York. Messrs. Callaway, Comer, and Bailey had not returned to the United States; and the secretary represented them at this function.

Harry Riemer, of *Daily News Record*, president of the Club, was toastmaster at the dinner, which was a well-deserved and inspiring tribute to the leader of the American delegation. More than 400 leaders of the textile industry were present, and a number of Japanese business men and governmental officials also attended.

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I am compelled to say, however, that the limitations upon us were almost entirely those of our lack of time, and the obstacle of different languages, requiring interpretation of every inquiry and answer, usually through a translator who unfortunately was not familiar with the technical side of the mill. Within the restrictions of these handicaps, we were shown every courtesy that could be hoped for, and virtually all of our questions were answered freely.

Spinning and Weaving in Different Mills

The Japanese industry follows the European, rather than the American pattern, in that to a large extent the spinning and weaving are conducted separately. This is not universal, and the trend seems to be toward the installation of weaving at the spinning plants, but on the whole, one of the mills we visited is typical; it has something over 99,000 spindles, and 850 looms; with two-thirds of the yarn being produced for sale as yarn. Another of the mills visited has nearly 140,000 spinning spindles, 32,000 twister spindles, and less than 800 looms, which results in about the same proportion.

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Looking at the industry broadly for a moment, and considering only the cotton-textile branch, there were, in 1936, a total of 10,769,360 ring spinning spindles in Japan in mills belonging to the Japan Cotton Spinners' Association, which boasts membership of 98 per cent of the country's spindles. The membership includes 71 companies with 276 plants, and in addition to the spindleage given, these plants operate 92,416 looms. This figure represents approximately 30 per cent of the looms in the country, but since the Association has practically all of the spindles under its jurisdiction, it exercises automatically a production control over the remaining weaving equipment, most of which is organized under other associations. We were told that about *40 per cent of the woven goods production of the country is carried out in units employing less than 10 persons each*, situated in the agricultural areas, but that none of this cloth is involved in the industry's export business.

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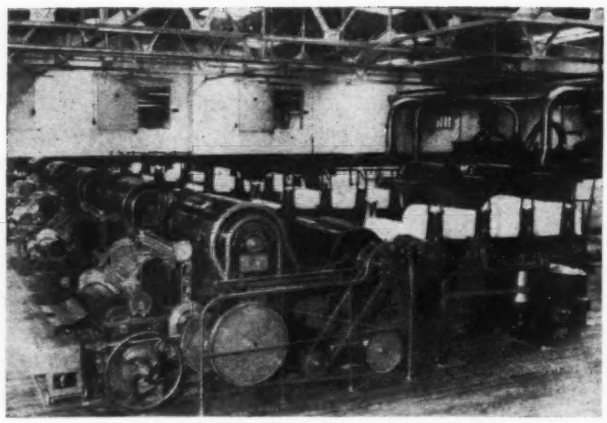


A Japanese picker room. Note the device for doffing and weighing laps; also the conveyor for placing laps on apron . . . . . .

The Cotton Spinners' Association exercises a complete control directly over the production schedules of its member mills, and since it embraces virtually all of the yarn capacity, controls indirectly the independent weaving units. At the present time all of the industry is operating under a curtailment program of 25 per cent of capacity, which has been in effect for several years, and is carried out through stoppage of equipment. The Association keeps records of the orders and stocks on hand monthly, and when the situation demands, issues an order for curtailment to the desired degree, which applies to all mills alike; and the Association's representatives go to each plant and seal up the required percentage of spinning equipment by removing the motive power and sealing the essential operating parts of the machine with a seal similar to the railroad car seals used in our country. We were told that the curtailment applies against the total capacity of the plant, and the selection of the particular equipment to be stopped is left to the mill's option; that is, a plant with 75 per cent of its spindles comparatively new, and the remainder obsolete, may effect the curtailment entirely on the old equipment.

Another interesting feature of the operation of the industry, in its program of production control, is that a curtailment of 2½ times the 25 per cent program, or 62½ per cent curtailment, is applied to any additional spindles installed during the period of curtailment. New spindles for replacement, however, are not affected.

Association Control Cleverly Arranged

Naturally, our first question was as to how such a strict program of control could be exercised, for, after all, there must be "individualists" in Japan as in any other country. The explanation was quite simple. First, the Association made a contract with the steamship companies transporting Indian cotton (which back in those days constituted the larger percentage of Japanese raw material) not to deal with non-member mills; second, a similar arrangement was made with some dealers of cotton in Japan; and, third, a contract with the yarn sales organizations was made on a similar basis, so that while membership in the organization is not mandatory by law, a non-conforming non-member would soon find himself without a source of raw material, and without a market for his product.

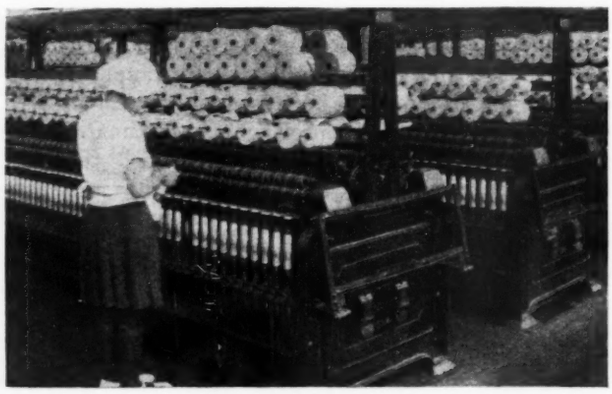
Another striking feature of the industry's composition is the fact that a very large percentage of its spindles are operated by a few large companies. Out of a total of about 11,000,000 spindles for the country as a whole, one of the large and progressive companies, the Kanegafuchi Spinning Co., Ltd., whose president, Mr. S. Tsuda, the members of our committee met, operates in Japan a total of 965,864 cotton spinning spindles; the Toyo Boseki (Toyo Cotton Mills Company, Ltd.), whose president, Mr. O. Shoji, was the chairman of the committee dealing with our mission, and who is president of the Japan Cotton Spinners' Association, operates 1,476,096 spindles; the Dai Nippon Boseki, two of whose mills we visited, operates over 920,000 spindles in Japan. These figures do not include relatively large operations by some of these companies in China. Fuji Gasu, another large group with 10 mills, has a total of 664,944 spindles. So it is seen that these four concerns control about 40 per cent of the spindles of the country; and there are several others whose total spindles runs up between 400,000 and 500,000.

The Association exercises no major jurisdiction over the member mills, other than that of production control. Matters of wage rates, work assignments, sale prices and policies, etc., are left to the jurisdiction of the private companies, but in these and other matters there appeared to be a close uniformity among the mills visited, and we were told that this prevails generally throughout the industry.

Operatives Mostly Females

Hours of work for operatives are fairly uniform. A national law prohibits the employment of women after 11 P. M. at night, and the Factory Law limits the hours per day to 8½ hours. Practically all of the spinning mills operate on two shifts, the first from 5 A. M. to 2 P. M., and the second from 2 P. M. to 11 P. M., with a half-hour recess for meals on each shift. The mills operate on Sundays, but two rest days per month are required, and four are generally given.

Perhaps the most striking feature of the Japanese mills that impressed our party was the composition



A Japanese girl operative at a ring twister. Japanese machinery is built low for the convenience of these operatives . . . . . .

of the labor force; in every mill visited at least 80 per cent of the labor force is female, largely girls between 14 and 17 years of age. We were told this situation prevails generally, and this is confirmed by the official figures of the Spinners' Association which show for 1936, a total of 150,148 employees in its member mills, of which 132,246 are female, which figures about 88 per cent female for the industry as a whole. One mill we visited, with about 140,000 spindles and about 800 looms, employes 2,300 females and 150 males, the men being used entirely in supervisory and mechanical work. It was most revealing for us to walk, even hurriedly, through a mill of this size without seeing any male employees except in such positions corresponding to our section men and loom fixers; and was rather startling to see Japanese girls operating opening machinery, pickers, and slashers.

This brings us to the labor system in the Japanese mills, which was the outstanding feature of interest to me. These girls are drawn from the farms and agricultural villages, work in the mills for from two to three years, and return to their homes to become married and take up home responsibilities.

The large companies maintain recruiting staffs, which go into the rural districts and villages as employment agents. There appears to be an abundant labor supply, and the recruiting agents use careful selection in choosing the girls. We were told that it is a mark of distinction in a village for a girl to be selected for work in the mill.

Invariably, the Japanese mill and its properties are surrounded by a wall which embraces the mill compound, and the girls are housed in large dormitories, which are provided free of cost by the mill. These dormitories are the equivalent of our mill villages, and are designed to meet the preponderance of unmarried female employees. They are located, as stated, within the mill compound, usually connected with the mill buildings by covered passageways, and in the newer mills these passageways are enclosed with side glass. The only means of heat in these dormitories are braziers, stone crocks filled with sand, in which charcoal sticks are burned. These braziers are located in the corridors, outside the girls' rooms. This was the universal "heating system" we encountered in orthodox Japanese restaurants, tea houses and homes.

A large weave room in one of the plants of Toyo Boseki in Japan . . . . . .

A typical room in a Japanese mill dormitory. From 9 to 12 girl operatives live in a room like this; their bed mats are stored in wall cabinets when not in use.

The girls live in groups, usually about 8 or 10 to the single room, which, when not in use, is totally devoid of furniture except for the ever-present straw matting on the floor. Each girl has a series of cabinets enclosed by sliding doors in the side walls, in one section of which she keeps her bedding (a mattress, sheets, etc.); in another her clothing, in another her personal effects, etc. There are large bathrooms and toilets on each floor (the dormitories usually being two and three story) and each floor or section is in charge of a matron. All of the girls eat in a large dining room, and each dormitory is equipped with a canteen, operated either by the mill company or under lease by outside interests; a hair dressing parlor; an assembly hall and school rooms. It is general practice to have also first aid rooms and hospitals, the services of which are available free of charge.

The girls are required to attend school for two hours a day, under competent instructors furnished by the mill, and are taught language (usually Japanese and English), history, mathematics, and the popular flower arrangements and tea ceremony. Religious services are held regularly. The girls are not confined to the dormitories in their free time, but the first-shift workers must be back in the compound before 8:00 P. M.

Although practically all of the female personnel is composed of single girls, there are at all of the mills married women and their husbands, in small number. These live in houses furnished by the mill, and the few single men live in separate dormitories, all usually within the mill compound wall.

No detailed figures as to wages were available, but it was authentically stated that the average wage for the girls in Japanese mills is 80 sen per day. A yen, at the time of our visit, was equivalent to about 28½ cents American money, and there are 100 sen in a yen, which means that the average wage is about 22 or 23 cents a day. Meals are furnished at a total cost of about 15 sen a day, representing a little more than half of the cost of the meals to the mill.

This comparatively meager wage scale would in itself provide the material for an interesting and extensive study, which of course was not possible dur-

ing our visit, and furthermore, we were more directly concerned on our mission with its undeniable effect upon our own markets rather than the internal domestic economic structure of Japan. However, it is not difficult, with even a brief contact with the simplicity of life among the industrial element in that country, their elementary, almost meager demands and standards, to realize that, appallingly small it appears in comparison with our own, this low income can in good reason fit into the Japanese scheme of things; that theirs is a different mode of life, with standards sufficient for them but not comparable directly, in fairness to Japan, to our own.

The question of so regular and frequent a labor turn-over was a natural one in our minds, as well as the problem of training the employees for so short a tenure of service. We were able to get only general information in reply, to the effect that the mill provides special full-time instructors, who, upon the arrival of a new corps of girls, segregates them according to background, education and aptitude; and after two or three weeks of intensive training, the new workers are put into the regular production crew of the mill, first as helpers, then gradually as full-fledged operatives.

We learned from friends both within and out of the industry itself that the moral and spiritual standards among the girls in the mills is very high. We ourselves were greatly interested to find that in our own brief observations they appeared at work and in their dormitories to be a fully contented, healthy group, eager and enthusiastic in their work.

Japanese Mills—Japanese Machinery

Our party was shown first, the newest mill in Japan; it was built about two years ago, and all of the machinery had not been erected. Trying to get as complete a cross-section as possible within our limited time, we asked to see some older mills, and of the three others I visited, one had been in operation for about 30 years, and the other two were from 15 to 20 years old. Working against the obstacles of time and language difficulty, we were able to get few details, but one fact was predominant, and that was that as rapidly as possible, Japan is equipping her mills with machinery of Japanese make. The brand-new mill which we saw first was completely equipped, from cotton warehouse to cloth room, with productive and auxiliary machinery, and other equipment, made in Japan. The older mills were originally equipped with English machinery—largely Platt's, and some Howard & Bullough—but all replacement, etc., were of Japanese manufacture.

We did not see any producing machinery of American make. The Japanese high draft (long draft) spinning which we inspected follows the pattern of the English principle, with a large heavy steel roll on the back, and an adaptation of the two-belt principle. We saw no improved drafting on roving frames nor drawing. The Toyoda looms (shuttle changing) appeared to be running efficiently, and as a whole spindle speeds and drafts on spinning were relatively high, and the use of variable-speed motors on spinning seemed fairly general.

But in no mill did we see automatic spooling and high-speed warping of the Barber-Colman type. Two of the mills visited use the old style spooler and slow-speed warper; and the other two wind the warp bobbins onto wooden cones for use in magazine creels feeding to what were plainly marked "High Speed Warpers" but which under our observation did not in any way approach the speeds attained by comparable equipment in our country.

We found the job assignments surprisingly low, as will be seen from the following comments on some features of the four mills visited. We found a number of interesting and ingenious devices, some of which undoubtedly resulted from the use of girls on all jobs in the mill. But, while freely admitting the incompleteness of our study, we came away without having seen any evidences of any outstandingly superior efficiency.

Manufacturing Details

There was no one-process or single-process picking in any of the mills we visited, mostly two-process. An ingenious arrangement used in all four mills was an elevating mechanism which carried the fresh supply of laps up to a rack located above the apron of the finisher picker, making it unnecessary for the operative to lift the lap other than to move it from the truck to the conveyor chain which conveyed the laps into place above the apron; then when the apron was to be filled the fresh laps were simply lowered into place on the apron.

Another interesting device, used in three of the mills, was a platform at the front of the picker, onto which the lap was rolled when doffing the machine. This platform, which swung away from the picker at one end, had on top of it a curved tray into which the lap rolled and which represented the beam of a scale, so that the lap was removed from the picker and weighed at the same time, and from this platform the lap was put onto a truck or conveyor for movement into the card room. The other mill used the same principle, except that instead of having one of these racks at the front of each picker, they had one platform for a line of five pickers, it moving from one to the other on a track.

The pickers in the brand-new mill have no cone belts, the evener motion changing the speed of the feed through an electrical mechanism instead of belts. The other mills used English type pickers with vertical cones.

This same new mill has about 800 Toyoda (Japanese) high-speed shuttle-changing looms, all individual drive. The one we counted was running approximately 210 p.p.m. on a 36-inch fabric. This mill warps from cones, but at very slow speed. Japanese-make long draft spinning was running making 100s from single roving, with a draft of 33, a spindle speed of 12,000 r.p.m., and a front roll speed of 88 r.p.m., 1⅛-inch ring, 2⅜-inch gauge. The work assignment is 700 spindles per operative.

The next mill visited was an old plant, kept very well up-to-date. Most of the machinery was English, largely Platt's. The mill uses ⅞ to 1-inch American cotton, making 30s warp and 35s filling; Platt opening equipment (1916); English spinning changed over to

Japanese long draft and variable-speed motor drive; slow speed warpers and old style H. & B. spoolers (1913). They have a varied assortment of looms, using steel harness and four-bank stop motion on bobbin change looms with four-frame drive. On a 61x60, 40-inch fabric, the girls run 25 looms each, doing their own battery filling. This mill opens up 12 bales of cotton at a time.

The third mill is about 30 years old, but its mechanical equipment has been maintained in excellent condition. It has a total, in four units, of 122,000 spindles, and 780 looms, some of which are English plain over-pick type. It makes 30s to 150s, and has 2,610 employees, of which 2,370 are female. It has a men's dormitory of 32 rooms, with a capacity of 256; and a girl's dormitory of 136 rooms, with a capacity for 2100. It operates a three-year school course and also a one-year special course. Food is served at a charge of 18 sen a day for male employees, and 14 sen a day for female workers.

On 100s yarn, this mill has a spindle speed of 10,000 r.p.m., with a front roll surface speed of approximately 600 inches per minute (that is the way the chief engineer, corresponding to our superintendent, gave it to me). They have a draft of 30, with single roving, using 1¼ to 1⅜-inch cotton. The work assignment is 500 spindles per operative. On 30s, they reported a spindle speed of 12,000 r.p.m., on a 1⅝-inch ring, 20 turns of twist per inch. The work assignment is 400 to 600 spindles to the operative.

The fourth mill is an old plant, with 99,832 spinning spindles, 44,462 twister spindles, and 850 Toyoda shuttle-changing looms. Two-thirds of the yarn is made for sale, with 40s and 46s being produced for consumption.

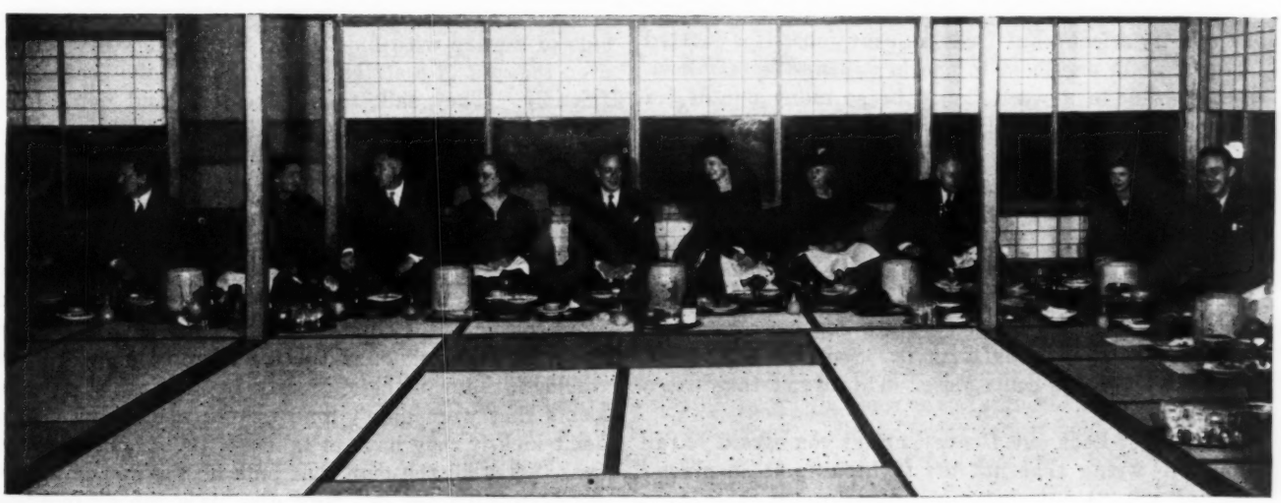
The card room here has 223 cards, some Platt Model 1909, others Toyoda with individual drive. In this room there are 12 girl card hands, one male supervisor and 11 repairers. The doffer runs 10.2 r.p.m., and the cylinder 170 r.p.m. Three processes of drawing are used, with a front roll speed of 380 r.p.m., with a 1⅜-inch roll.

The spinning is tape drive, long draft, with a spindle speed of 13,028 r.p.m., on 40s warp, roll speed of 180 r.p.m. for a ⅞-inch front roll. The regular job assignment is 420 spindles to the girl, with 630 spindles as the maximum job.

The Toyoda looms, 44-inch reed space, run 175 p.p.m. With a total of 850 looms, there are 90 weavers and 20 helpers in the room (undoubtedly for both shifts). Beginner-weavers handle 15 looms, and the maximum number to the girl is 30 looms.

All of the Japanese mills that we saw—and we were told it is generally true—are of one-story height, usually of concrete and brick construction. In all of the four mills, the looms are set on concrete blocks. Steam coil heating is used in three of them, the new one being equipped with unit heaters. One mill puts its bobbins of yarn in canvas bags with handles for carrying instead of putting the bobbins directly into trucks. We saw a large number of trucks equipped with rubber-tired wheels or casters. The floors of all of the mills were in good condition, and even the coarse goods mills were marvels of cleanliness and the absence of fly and lint was noticeable. In one mill the slashers are equipped with individual motor drive. All of the mills use slasher hoods made of cherry wood, and one mill has its slashers equipped with the type of immersion roll consisting of a series of small bars, which has recently been brought out in the United States. We did not see any cans or bobbins which would be considered in America as large packages. One girl doffer we noticed laying the empty bobbins on the roller beam down the entire length of the frame before starting to doff. All of the machinery is of less height than ours, on account of the short stature of the Japanese girls. We saw no high duty type humidifier heads, only ducts or atomizer type.

A Japanese Dinner for the American Textile Mission



A part of the American group at one of the numerous entertainment functions—an orthodox Japanese dinner at a tea house near Osaka. Note the floor matting, which is the reason we removed our shoes upon entering. The six stone crocks seen represent the heating plant; they are filled with sand on which charcoal sticks are burned.

POOVEY AND JOHNNIE

A "human-interest" mill story in dialogue that contains some very practical information on loom fixing, and thin places in particular.

(Author's Note—Since "OLD-TIMER", personally and through his writings, was the inspiration for this little piece, I wish first to express appreciation for his influence and, second, to explain that the style used in this article is not an effort to "copy" the style of "OLD-TIMER" in relating his conversations with "JIM", but rather it is used because it provides the means of discussing in conversational form a lot of the "little things" that would be difficult to cover in the usual style of writing.)

JOHNNIE walked hurriedly into the water house adjoining the weave shed; he filled his oil cup, bit quickly at the stream of water in the fountain, and went back to oil his loom while the warp was off. His movements were anything but graceful, more in the nature of a man who doesn't know his job but is hastening to get it done.

When the lights flashed for stopping time he did not put on his coat to go home. He knew that he would get little rest there; a new man on the job just couldn't rest at home. Especially a loom fixer. He walked over to his old friend across the shed.

Johnnie: Hello, Poovey, how's it going today?

Poovey: They's been runnin' fairly well last three days. How you getn' long over there? Jus' lookit you, Johnnie, all wet, somebody musta poured water on you. That's caused from tryin' to work too fast and tryin' to get 'em all fixed at the same time. A fellow just can't run his job fixin' looms if he's gonna think about what's wrong with two or three looms while he's workin' on another one. It just ain't done. You've got to set down and fix the one you're at while you're there. Now, I *know* I can't fix a loom, but I can run my job. If I started runnin' from one loom to another just to knock down a flag, why in a week they'd be so many out of fix I'd want to go back to weaving just for the peace of mind I'd get.

Johnnie: You make loom fixing look so easy, though. You never seem to hurry and yet you don't have many flags. How do you do it? Sometimes it looks like my weavers are trying to see which one can put up the most flags; it must be some . . .

Poovey: Wait a minute, I got a flag now; come on, we'll see what's wrong with it. See, the stirrup on the pick lever has come loose. This won't take but a second.

Johnnie: Look out, Poovey, aren't you afraid you're going to wring that nut off tightening it so much? Do you always put that much pressure on them?

Poovey: One time I was workin' with a old factory man and I asked the same thing. He told me to tighten a nut as far as it would go and then give it another turn. If the bolt will take it, I won't have another flag for this stirrup comin' loose for a long time, and if the bolt won't stand the gaff and wrings off, then it was comin' loose later on *anyhow,* and I've saved time both ways.

Johnnie: Well, you've fixed the loom; what are you looking for now?

Poovey: Oh, it ain't such a bad idea when you go to a loom to take a look at the pickers, see if they're parallel; feel the pitman arms and tighten them if necessary; glance at all the bearings; take a peep at the let-back clutch . . .

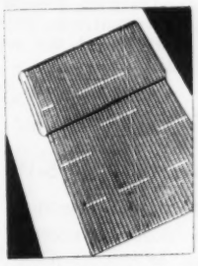
Johnnie: That's just what I wanted to ask you about. I've been having trouble with thin places lately and a lot of the time I can't find the cause. Let's talk about thin places for awhile; are you ever bothered with them? You know, when we finish college, we get a general idea of the mill, but we don't claim to be able to run any job in the plant and the fine points only come to us through experience.

Poovey: Yeah, I reckon if you put *all* the new college graduates in one mill it wouldn't run very long. Still, you've got to have men with some education to learn up and carry on a few years from now. You know, you'd be surprised how much help a college man can be to us fellows, though. We help you learn the machinery and you help us with figurin' and a lot of other things. You know, I use to think all this talk about unions and strikes was the thing until one of them college boys that come here explained it to me. He didn't just pop up and say so, some of us asked him about it one day. Seems that he'd read about it and was thinkin' about it too. And, Johnnie, since we got rid of the blasted thing—I'm still talkin' about the union with a man that sets up North on the other side of his lap with his feet on the big desk—we ain't even *thought* of a strike. We work and the bosses are friendly. They talk to us like men and don't look worried and fire a fellow for mistakes no more. Sometimes we get a little more work to do, but if the company buys better looms and better cotton, and the bosses help us to run things better, why I can't see why we shouldn't have a few more looms to fix. Heck, I'd a whole lot rather weave on seventy-five looms that didn't stop much than on twenty looms that looked like I never could start them up. Besides, you know the company ain't goin' to give us too much to do, it would cut down their profits by having some idle looms that we couldn't tend to. In a bad season, we don't kick if they have to take a little off our pay, because after all the man that puts up the money has to get something for it. He's give us a job all our life so it don't make no nevermind if he has to cut down a little when things ain't selling. I'd a whole lot rather do that than just have to quit work for a long time.

And then . . . oh shucks, I clear forgot about them thin places you asked about, what was it you was wondering about? Here, want a little chew of tobacco, keep the lint out o' your throat.

Johnnie: Thanks, I'm not much of a chewer but I'll try. I just wanted you to tell me some of the things that cause thin places so my seconds won't be so high. You see, now-a-days they don't give a fellow a high job just because he's educated, he's got to get production and have low seconds just like the rest of them. I want to go up.

Poovey: Okay, we'll take a look at a loom and talk about it at the same time. Now a lot of thin places are caused by the filling grates gettin' stopped up with cotton, lint, and trash. This keeps the filling fork from passing through and instead of the fork catchin' and making a change when the bobbin has run out, the loom just runs on and makes a bad place in the cloth. Of course if feelers are used there won't be so much of this. For a long time, this was some years back, we had so many thin places that the place looked like a skeleton. One of the section men used to come in every morning early and clean his grates out with a bristle to keep from havin' them. The manager noticed that this particular fellow was makin' a good record and asked him how he did it. From that time on the mill employed a boy to go around every day and clean them out. By the way, the fellow that thought of cleanin' the grates out every day is now overseer of weavin' and is making a good name for himself. Tell you somethin' else, Johnnie, see how this snakehead is made, well, the fork only passes through the grate when the fillin' runs out, doesn't it? You can file the front of it down a good bit and the loop of the fork will rest farther down, this will throw the fork through the grate every other pick and help to keep it clean. I've got a couple of them set up like that down here . . . see how far the fork goes back when the lay comes forward? I don't see no use to do 'em all that way, but when a loom is under a humidifier like this one is, it gets sticky in the grate with the lint and the fork passin' through helps knock it out.



Johnnie: Wonder why the company doesn't make them all conform to this pattern?

Poovey: Dunno. Mebbe they got reasons. But to go on, I gotta talk kinda fas' cause you haven't eat dinner yet and I got a warp comin' off before long. The let-back motion must work well.

Johnnie: Yeah, every time I find one that doesn't work I put on a new one of those little gadgets right there.

Poovey: I wouldn't say that is necessary all the time. Listen, my boy, you can take any sixteen year old kid and put on new parts, what you want to do is *fix looms.* Don't get me wrong, if a loom part is worn out you will save the company money by replacin' it, but nine times out of ten you can set that loom up and it will be just as good as new. Now when your let-back ain't workin' like it ought, look and see if your take-up shaft is as high as it should be. Just a whole lot of the time it has dropped down and you can raise it up in two minutes.

Johnnie: I don't quite understand what you mean by fixing looms instead of overhauling. Do you think that I should let a part run until it just won't run any longer?

Poovey: No, sir!!! Worn out parts such as shafts, gears, fillin' fork pins, studs, and all that should be taken off when you find them, but I mean that you ought'n just to take off parts because you can't find anything else wrong. I say look about first. Kinda put it this way—would I take that part off if it was my money I am spendin' or would I take a couple more minutes and find the real trouble? By the way, here's somethin' us fixers have been wonderin' about a long time. See this gear here between the big take up gear and the sandroll gear, how much difference would it make if the number of teeth in that gear be changed? Some of the men say one thing and some say another.

Johnnie: Poovey, the size of that gear or the number of teeth in it wouldn't make any difference. It is an intermediate gear and is merely put there to transmit the drive; a chain would take its place if it could be made to work satisfactorily. Now should a pinion gear be on it that drove the sand roll, then there would be a difference. It is figured in gear calculations by having the driving gear divided by the driven gear like this . . .

Poovey: Hey, quit writin' on that cloth, suppose you bought a piece of cloth and it had a lot of 'rithmetic all over it?

Johnnie: All right, all right, I'll stop but let's go down to your work bench and it won't take a minute to show you this.

Poovey: That's somethin' I always wanted to know, say, I'll come over to your house and let you show me about that stuff. Do you mind?

Johnnie: Tell you what, I'll trade with you; I'll ask you a lot of foolish questions like today down here and a couple of nights on the week end I'll come over to your house or out at the club house and we'll run over some mill calculations.

Poovey: That's a go, this'll be my day as teacher so I'll bull for a few more minutes on these thin places. To make the fillin' forks pass through the grates without touchin' them, you gotta have no lost motion in the lay. See these little collars on the rocker shaft? They should always be there; you're liable to break them off if you tighten them too much, but you might just as well set down and put them on again 'cause you're goin' to have trouble if you don't. As long as they are against the rocker bearing and tight they will hold that shaft in place and there won't be any sidewise movement. If they break off, then that shaft is goin' to seesaw back and forth and your forks will hit that grate. Your picker foot will hold the rocker shaft in place to a certain extent but there's nothing like a couple of good collars to do the job right. A loose sword will work around, too, and mess up your forks.

I go over my swords and collars once a week to see if they are tight. About every six months, I not only feel them, but I stop the loom off and give that sword set-screw a little turn if it will take it. This little thing under here is a sword clamp. If you keep it tight it'll help hold the lay in place, too, and not only keep down seconds but it'll work for you to keep down break-outs. I've already done said somethin' about loose pitman arms so I won't go into that again. But if they're loose they'll not only make thin places, but break-outs and everything else.

Johnnie: What about worn snakeheads, filling arm bushings, and rocker shafts?

Poovey: Say, whose teachin' this class anyhow? Yes, sonny, all those are important, too, and also the change rods. I remember one time I worked on a loom for thin places and did everything to it but bolt it to the floor. I had fooled with that darn loom for three days and it still made thin places. Funny, too, it didn't make them on the fillin' change. I had worked on it so much that it really wasn't the same loom at all I had put on so much new stuff. In desperation—that's a good word; I learned it from a fellow in the spinnin' room—I sat down on the floor to think it out. All of a sudden I saw the treadle ball slip out to the side. I got up and put in a new treadle stud and that loom never did give me trouble for thin places any more. Go on, boy, and eat your dinner, that weaver flagged me on that warp off and is standing there lookin' at me.

(If you would like to read further reports of these conversations between Poovey and Johnnie, please let us know; and we will see what we can do about it.—The Editor.)

Many Expected to Visit Southern Textile Exposition in Greenville April 5-10

Thousands of the executive and operating personnel in the textile industry are expected to visit Greenville, S. C., to see the 12th Southern Textile Exposition, the only textile show and one of the largest mechanical fairs in the world. This year interest has been heightened by the partial recovery of business in all lines. Everything in the way of machinery, installations, accessories, and supplies used in the fabrication of cotton, wool, silk, and rayon will be seen at this show. For executives it will afford a means of obtaining in one visit practically all the information obtainable as to improvements in machinery, equipment, and processes. Leading manufacturers in all lines which equip textile plants will be present with experienced members of their staffs to demonstrate and explain things. The advantages of attending the exposition are too great to be overlooked.

On the other hand, department heads and workers who are seeking the most scientific and efficient methods of handling machinery and equipment, and the various accessories and supplies needed in their factories will learn a thousand useful lessons which can be easily communicated by word of mouth but are hard to obtain from books and catalogs.

The show opens Monday, April 5, at 10 o'clock A. M., with an address by Hon. George H. Earle, governor of Pennsylvania, who will be introduced by Olin D. Johnston, governor of South Carolina. The public will be admitted on Monday, but because of the large crowds expected, the attendance will be restricted therefrom to workers in and those connected with the textile industry. The management particularly desires that every executive and overseer should be provided with a season pass, and if he does not receive one under the system of distribution, he is asked to apply for it.

Student Textile Exposition at N. C. State April 22

The student Textile Exposition will be held at the N. C. State college April 22 in connection with the style show. Marshall B. Payne, Kannapolis, N. C., has been elected superintendent of the exposition, which is regarded as the highest honor which students can confer upon a member of the textile senior class. Mr. Payne has had considerable practical mill experience and is acting as student assistant in the weaving department. He has established an excellent scholastic record at State College.

Goodrich Gets Factory Site

The B. F. Goodrich Company, Akron, O., has purchased a factory site and building at Cadillac, Mich. This factory was occupied formerly by the Acme Motor Truck Company. It contains approximately 100,000 square feet of floor space. Work has already begun to fit the building for the manufacture of a general line of rubber goods.

News of Clark Controller Co.

The Clark Controller Company, Cleveland, O., has announced the resignation of E. A. Hurme as district manager in the Philadelphia office. He is succeeded by O. L. Holcombs, a former member of the sales department. Robert H. Hoge has joined the sales force and will have his headquarters in the New York district office. J. W. Hammann, formerly connected with the New York sales office, has been transferred to the Pittsburgh office as assistant to G. W. First, district manager. W. R. Uffelman, also of the sales engineering department, will become connected with the Detroit office. S. J. Nogosek, sales engineer for the New York office, was transferred to the home office of the company, in the same capacity.

Westinghouse Office Moves

The Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., will move its Pittsburgh office and some of its general offices now located at East Pittsburgh to the Union National Bank Building in Pittsburgh. This move will be made about May 1.

New Bausch & Lomb Laboratory

At a cost of approximately $40,000 and a 50 per cent increase in its staff of graduate chemical engineers and metallurgists, Bausch & Lomb has opened a new laboratory for applied research. The company believes that the optical industry in America will meet increasingly keen competition from abroad where low labor costs exist, so it will engage in a broad program of fundamental investigations on the chemistry and physics of glass surfaces and in the development of new materials and processes for the industry.

Bachmann Director of Bank

Louis Bachmann, president of L. Bachmann & Co., 257 Fourth Ave., New York City, one of the foremost concerns in the woolen and worsted industry, has been made a director of the Public National Bank and Trust Co., New York.

Uneven Knitting Yarn— A Problem and an Answer

(An example of the further service which a magazine like COTTON *is privileged to render its industry, usually in addition to the material furnished through the pages of the magazine, is given below. The inquiry and the answer secured and submitted are presented as being of general interest to other readers.—* THE EDITOR.)

A PROMINENT southern mill recently submitted to COTTON a sample of fabric knitted from combed yarn, together with the following request:

The Problem

"I am enclosing a sample of knitted hose showing heavy and light streaks in it that trouble us considerably. We have been unable definitely to find out just where in the processing these heavy and light places were made. We will thank you to check into this and see if you can determine what causes these yarns to streak this way with light and heavy places."

The problem was submitted to another southern mill where the sample was carefully analyzed in the laboratory and the following interesting report made:

An Answer

"The fabric received represents high quality, much better than average length staple being used for this count, and possesses unusual softness which is greatly desired by knitters.

"The fabric tests an average of 18s/1 combed yarn, however, it varies considerably as to count; the heaviest sizing is 17.67s and the finest 21.18s. This is 19.5 per cent total variation in one spinning bobbin, since the fabric is knit from one end of single yarn. Having made repeated tests of all types of spinning by various manufacturers, to determine the amount of variation in the continuous length of yarn on one bobbin, our conclusion is that a maximum of 6 per cent represents good spinning.

"The variation of 19.5 per cent as found in this short length of fabric is entirely too high and is causing the heavy and light streaks. When the counts vary, the tension under which the yarn knits into the fabric also varies, and this combination of variation in both counts and tension causes heavy and light streaks.

"There is sufficient variation in all spinning to cause streaky appearing knit fabrics when the fabric is knit from a single end. The same degree of unevenness is less noticeable to the eye as the counts get finer; that is, the same unevenness in 30s to 40s is not seen as readily as in 20s. Really, this unevenness is very seldom noticed until the counts run as low as 18s and coarser.

"Knitting narrow fabrics from a single cone is the best way we know to show unevenness. In fact, this type of fabric magnifies the general unevenness common to all yarn. The same unevenness in fabrics knit from 4 to 12 cones is distributed so that we do not have the noticeable streaks as represented by the fabric in question knit from one cone. This same kind of unevenness is also common to silk and causes what the trade terms as 'rings'. To overcome this, silk knitters have adopted a system of knitting one course from one cone, the adjacent course from a different cone, and the next course from a still different cone.

"We have tried to point out a certain unevenness as common to all spinning and which knitters will accept as satisfactory to a certain point. When we go beyond this point, then we have certain bad manufacturing conditions. Since unevenness may start with the opening and picking process, and can occur at any one or all subsequent processes, of both carding and spinning operations, it is impossible to state just where in the processing the heavy and light streaks of the fabric were made.

"Inferior cotton is one cause but can be eliminated from consideration as the cause in the fabric under question. Equipment is a second cause, and this includes having sufficient machinery in good physical condition, properly set up and adjusted and run at reasonable speeds. Correct weights must be maintained at all times at each process. Roller settings, drafts and tensions must be correct. Uniform relative humidity conditions are important. Bad gears, crooked drafting rolls, back-lash in trains of gears, and other machine parts not in good condition will very definitely create uneven roving and yarn. In fact, the causes are so varied that it is impossible to enumerate them, but they all come under the head of good and bad manufacturing conditions and operating practices. You know that this covers quite a lot of ground.

"In your September issue of COTTON you published an excellent article on 'Causes of Uneven Roving' (see page 95, September, 1936, COTTON). You might review this article for some very practical information. Uneven roving, of course, spins into uneven yarn. It is the general assumption that unevenness of sliver and roving is overcome by doubling on subsequent drafting processes, but some thorough investigation along this line has revealed that far less evening up actually occurs than is generally believed.

"So to have even spinning, it is necessary to have even roving, slivers and laps in their respective sequence. Only a brief reference has been made to adjust some of the innumerable variables involved in creating evenness and unevenness in cotton manufacturing."

PLAIN (?) WEAVE

By Howard G. Price

SOMEWHERE along the line from antiquity to the present time the name "plain" weave came to be applied to the one up/one down system of thread interlacings in woven fabrics. All of which was well and good, so long as cloth woven with this "plain" weave remained single-colored, unpretentious, and undecorated. But, also somewhere along that line from antiquity to modernity, the practice of yarn dyeing came into being. And right there this so-called "plain" weave was emancipated. For, by using various combinations of colors in warp and filling, rather than a solid color throughout, many distinctive and useful figures and designs can be obtained, without relinquishing the one up/one down construction of the fabric.

It is our purpose to illustrate just a few of these color effects, describe how they may be produced, and show how by utilizing various groupings and combinations a practically unlimited number of useful effects may be obtained. For convenience's sake, the color arrangements necessary to secure the effects illustrated are shown in black and white, but the designs can, of course, be produced with any two contrasting colors. In each of the accompanying figures the arrangement of warp and filling is indicated by the double lines of color appearing above (for warp) and to the left (for filling) of the effect.

Perhaps one of the simplest of the plain weave color effects obtainable is the well-known "hairline", as shown in Fig. 1. To secure this effect the warp ends are arranged one black/one white, while the filling is laid in one white/one black. If necessary, (as in some of the combination effects to be described), this arrangement may be reversed, the warp following a one white/one black order, and the filling one black/one white.

Another of the basic effects which can be produced on a plain weave ground is that shown at Fig. 2. This weave, known as the "tricot", is the opposite of the hairline—the lines run in a horizontal, rather than vertical, direction. To get the tricot effect both warp and filling are arranged the same: either one black/one white or one white/one black. It matters not which of these arrangements is used, so long as both warp and filling follow the same plan.

Leaving the straight line effects, we get an idea, in Figs. 3 and 4, of what can be achieved by juggling somewhat the arrangement of threads, although still maintaining the plain weave construction. Fig. 3 is an effect approximating a four-pointed "star". It is obtained by arranging both warp and filling two black/two white.

Fig. 4 shows a checked effect which can be produced by arranging both warp and filling six black/two white/two black/six white. This is, of course, just one example, picked at random from the great number of checked patterns which can be made by

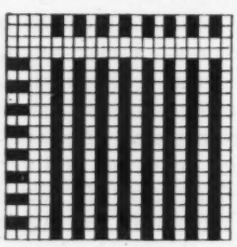


FIG. 1

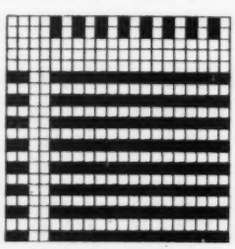


FIG. 2

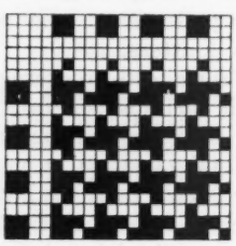


FIG. 3

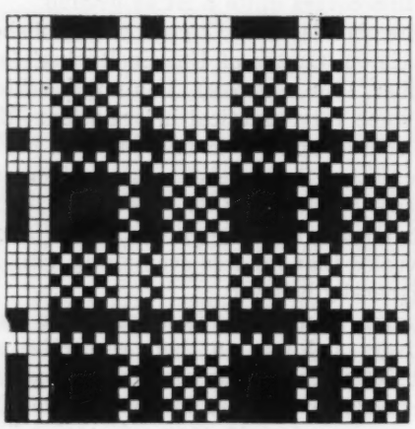


FIG. 4

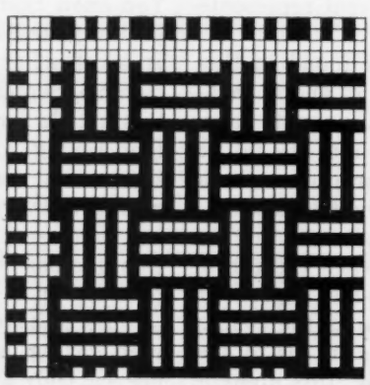


FIG. 5

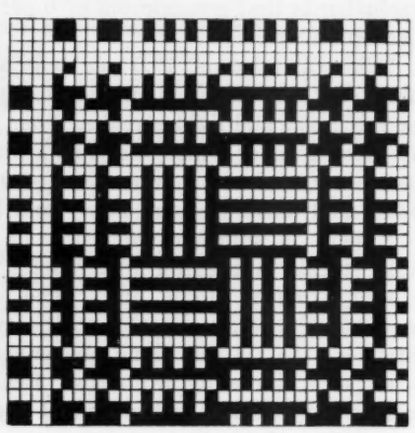


FIG. 6

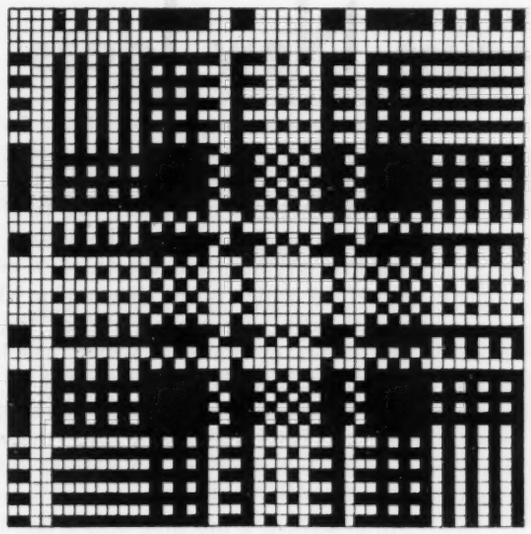


FIG. 7

various arrangements of warp and filling threads. Others will no doubt suggest themselves, and by a little experimentation with cross-section paper and pencil, a large group of interesting checked effects can be sketched out.

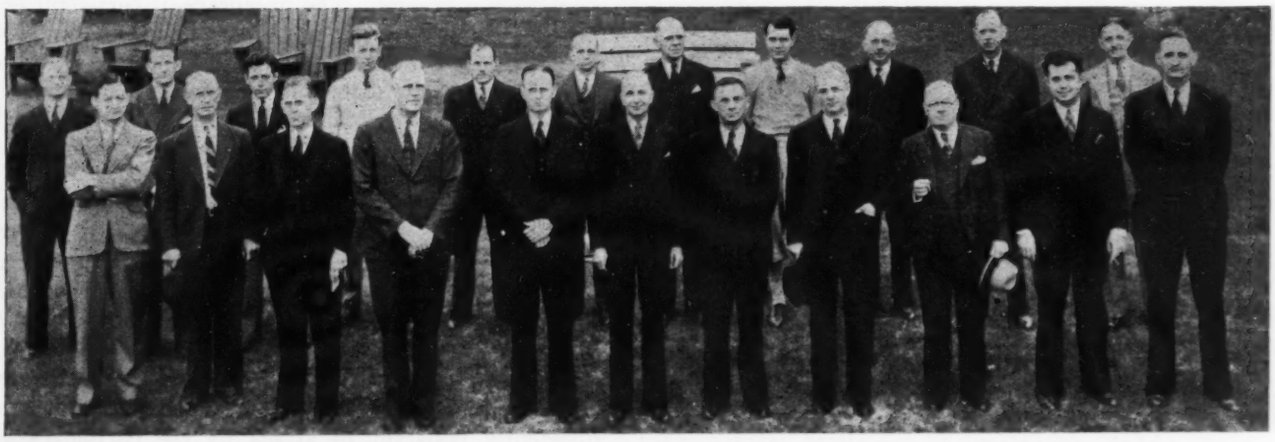
Figs. 5, 6, and 7 illustrate other examples of the variety possibilities offered in plain weave color effects. By combining two or more of the simple effects into a single pattern we can often achieve entirely different, and most unusual designs. For instance, in Fig. 5, we combine the hairline and tricot effects previously described, and produce therefrom a sort of checkerboard or entwining design made up of alternating blocks of vertical and horizontal stripes. In our illustration we show this effect made on a seven thread basis, that is, seven threads hairline, followed by a like number tricot. In actual practice this effect may be made as large or as small as desired.

Similarly, in Fig. 6 we combine the four-pointed star effect with the newly achieved checkerboard or entwining design. From this grouping we obtain blocks of star effect, checkerboard, and an entirely different "chance" or "mongrel" effect, which in no way resembles either of the other two.

In Fig. 7 we have combined vertical stripes, horizontal stripes, and a slight variation of the checked effect shown in Fig. 4. The result of this combination is blocks of stripe, both vertical and horizontal, checkerboard, two new mongrel effects—light spots on a dark background, and dark spots on a light background, and also a rake-like effect similar to that shown in Fig. 6.

These are but a few of the color effects which may be produced on a plain weave ground. Our aim has been not to exhaust, but rather to suggest, the possibilities offered by this type of development. We believe that further experimentation by individual designers with definite problems in mind will result in the production of a wide variety of tasteful and "salable" effects based on the simplest of all constructions—the "plain" weave.

Purchasing Agents of the Carolinas and Virginia Hold Meeting at Sedgefield Inn



This picture was taken at the meeting of the Virginia-Carolinas Purchasing Agents' Association held at Sedgefield on January 22 and 23. The following men attended: Front row (right to left): Hext M. Perry, Pur. Agent, President of the Association, Greenville, S. C.; R. V. Spangler, Sec. of the Assn., Duke Power Company, Charlotte, N. C.; W. S. Pepperell, Pur. Agent, Burlington Mills, Greensboro, N. C.; H. M. Hunter, Sec. and Gen'l Mgr., Proximity Manufacturing Co., Greensboro, N. C.; J. Y. Pharr, Pur. Agent, Cannon Mills, Kannapolis, N. C.; W. G. Thomas, Duke Power Company, Charlotte, N. C.; Harold Dry, Asst. Purchasing Agent, Cannon Mills, Kannapolis, N. C.; L. S. Neal, Pur. Agent, Roanoke Rapids Mills, Roanoke Rapids, N. C.; J. M. Geer, P. A., Marshall Fields Company, Leaksville-Spray, N. C.; C. F. Williams, Pur. Agent, Erwin Cotton Mills, Durham, N. C.; R. E. L. Holt, Jr., Asst. Pur. Agent, Burlington Mills, Greensboro, N. C. Second Row (right to left): D. B. Owens, Pur. Agent, Riverside and Dan River Cotton Mills, Danville, Virginia; W. D. McCullum, Marshall Fields Company, Leaksville-Spray, N. C.; Arthur C. Goodwin, Pur. Agent, Proximity Manufacturing Co., Greensboro, N. C.; G. M. Hill, University of N. C., Chapel Hill, N. C.; J. V. Garrett, Pur. Agent, High Point, N. C.; W. H. Pittman, Pur. Agent, State of North Carolina, Raleigh, N. C.; J. J. Preisinger, Pur. Agent, Aluminum Company of America, Badin, N. C.; O. G. Sawyer, Duke University, Durham, N. C.; George Waterhouse, Pur. Agent, Kendall Mills, Paw Creek, N. C.; Frank Coker, Pur. Agent, Sonoco Products Co., Hartsville, S. C.; J. H. Arthur, Hannah Pickett Mills, Rockingham, N. C.

Dyers—Chemists Discuss New Ideas

SIXTY-ODD members of the Southeastern Section of the American Association of Textile Chemists and Colorists attended the mid-winter meeting held at the Ralston Hotel, Columbus, Ga., Saturday evening, February 13. A dinner was served, which was followed by a technical program and the election of officers.

E. A. Feimster, Eagle & Phenix Mills, Columbus, Ga., was elected chairman of the section, S. I. Parker, Ciba Company, Inc., was elected vice-chairman, and A. R. Macormac, Alabama Polytechnic Institute, was chosen as secretary. For treasurer, Fred Crayton, E. I. Du Pont de Nemours, Inc., was elected with C. A. Jones, Georgia School of Technology, serving as councilor. A. K. Haynes, Rhom & Haas Co., will serve on the national nominating committee from this section.

The technical discussions proved interesting and instructive, and two of the papers given were illustrated with moving pictures. The first speaker on the program was E. H. Grayson of the Calco Chemical Company, Charlotte, N. C., who was pinch-hitting for Dr. R. H. Kienle of the same company, who was to have come down from the East for this meeting.

Mr. Grayson presented a paper on colloidized vat dyes, and later used the motion picture machine which showed a film illustrating the properties of colloidized vat dyes, and which was made in the laboratory. The film was in color. Mr. Grayson explained that the colloidal state may be reached in two ways: one, by starting with an aggregated particle and making it finer, or by starting from true solution and building up. Both of these methods are used by the colloid chemist. When the colloid state is reached, and the material is in Brownian movement, it tends to stay in permanent suspension except for such factors as electrical effects which also can at times be guarded against. The majority of the applications of colloidized vat dyes have been at present in dyeing and in pigment dyeing, further stated Mr. Grayson. Printing with colloidized vat dyes is in production, but frankly all the problems in printing, particularly that of obtaining maximum color value, have not been thoroughly worked out.

The picture started with the laboratory preparation of colloidized vat dyes: First, the press cake, then deflocculation, protection, until the dried product was secured. The particles shown in the press cake were aggregated, consequently, as the water was entrapped a stiff material was the result. The next step shown was deflocculation. This may be performed either chemically or mechanically.

One of the advantages of colloidized batches based on the fact that the dyestuff is in the colloidized or near solution state, is that in the package dyeing, or where the fiber is in massive form, it is possible to pass the material through the package and the dyestuff will follow the water through the same as a soluble salt will, i.e., into every corner and crevice of the entire package or mass of fiber. This permits so called pigment dyeing.

The next spokesman was Sidney Edelstein, A.A.T.C.C. research fellow, who touched on mercerizing research and then spoke on luster determinations. He described three distinct types of luster, the first being a direct reflection of the mirrow, the second the reflection from a mat surface, and the third, a semimat or lustrous surface, which is the class under which mercerized material falls. He explained that the examination of the luster of material which has been mercerized is based on the visual comparison of the luster of different samples. Experienced mercerizers are able to detect small differences in luster between samples of materials, but they are not able to give a quantitative figure for the luster of any one sample.

Mr. Edelstein described a machine which has been used in determining certain measurements of mercerized yarn. The yarn sample is wound evenly upon a card and is placed in position on the machine. A parallel beam of light is directed on the samples at many different angles; the light that is reflected from the sample strikes a copper oxide photoelectric cell which is mounted at 45 degrees to the sample. The cell has a potentiometer against a similar photoelectric cell and is balanced. Thus the relative amounts of light reflected by the sample, which is illuminated at many angles, is determined.

The final speaker on the program was G. L. Cox, development and research division, The International Nickel Company, Inc., who read a paper on "Some Characteristics of Monel and Other Nickel Alloys Relating to the Textile Industry", and then followed it with motion pictures showing the manufacture of nickel alloys. Extracts of Mr. Cox's paper are given as follows: "To the textile chemist, the principle use of a metal lies in its ability to withstand corrosion by those processes occurring in the production of a finished piece of fabric. The producers of corrosion resistant materials have been benefited by the efforts of textile chemists in establishing usefulness of modern corrosion resistant materials. Monel is a natural alloy containing approximately two-thirds nickel and one-third copper, with small percentages of iron, manganese, silicon and carbon.

Of general interest is the fact that nickel alloys retain their strength at elevated temperatures, and for this reason it is used widely for valves, valve trim, gaskets, plungers, and miscellaneous equipment handling steam or atmosphere at high temperatures and pressures. The problem of the textile chemists is important in that the metal, or alloy, selected for any particular job, must be not only long-lived, but also sufficiently resistant to attack by the corrosives so that no harmful contamination of the solutions occurs. Monel is practically resistant to concentrated caustic soda, salt, and unaerated acid solutions, and possesses useful resistance to hydrochloric, sulphuric, and hydrofluoric acid solutions. It is not resistant to nitric acids and other highly oxidizing acids, such as chromic acid. Monel is also not highly resistant to sulphurous acid.

Refreshment Service for Textile Mills

By Edward P. Taft

Supt., John P. King Mfg. Co., Augusta, Ga.

WHOLESOME refreshments are essential to the efficient mental and physical efforts of workers. Competent authorities, from study, have found that the "efficiency curve" of workers begins to decline three hours after taking food and that light refreshments served at intervals during working hours contribute materially to keeping the "efficiency curve" leveled out near its peak. In fact, the few minutes necessary for these refreshments are well spent. By maintaining the physical stamina of the body the worker is better able to maintain his highest ability and hold his productive capacity.

Officials of industrial plants, including cotton mills, have realized for some time, probably more from intuition than from any "efficiency curve", that some style of refreshment service was a necessary adjunct to their organization. Not to furnish this refreshment and then to forbid workers to leave their jobs to get it from whatever source they could, quickly brought about discontent and deceit. It was one of those don't rules which man accepts as a challenge and immediately proceeds to break, often with the overseers knowledge and tacit consent. It at once becomes a dead rule like many of the don't signs throughout a plant.

In the last year a decided advance has been made in the efficient serving of refreshments to industrial workers. Studies and consultations with those who have made a specialty of this subject have developed a service which minimizes past difficulties and gives most satisfactory results. A modern canteen and its servicing should be housed in a building erected on concrete foundations and with concrete floors. It should be metal-lathed on the walls. These are precautions against rats, which are a serious problem around mills and a source of great annoyance in a canteen building. There should be a separate room for the storage of such articles as potatoes, onions, soft drinks and other supplies that are purchased in bulk. Quantity purchases to get low prices and discounts should be made whenever possible.

The greatest advance in improving the efficiency of this serving of food to the employees has been in the modern lunch wagon. It is as far removed from its predecessor as a V-8 is from its ancestor "T". These carts are constructed entirely of metal and are attractively designed and painted. The main part has four compartments: three open to hold bottle drinks packed in ice and one closed with thermostatic heating for hot dogs, hamburgers, etc. On top and at the back is a series of glass-inclosed cabinets for cakes, sandwiches, etc. On top of the cabinet is a place to carry a large jar of pickles. The wagons are so designed that they will pass down all the main alleys of each room. With the numerous spare floors and towers the refreshments can be brought to every employee at his place of work.

Such a system requires constant supervision and close buying. It should have a full time supervisor who should purchase all material, see to the cooking of all food, the serving of the employees, and to the general neatness and cleanliness of all parts of the canteen and wagons. There should be regular schedules for the wagons and these schedules adhered to. If the employees know when to expect a wagon at a certain place they will not leave their work and lose time waiting for it. At least one person should be in the canteen preparing food so as to have it ready when needed. He can also serve those who come to the canteen.

In the John P. King Manufacturing Company's mill, when this modern method of refreshment servicing was recently installed, it was found desirable to turn it over to a concern which has made a study of this matter and has worked out an equipment and service that is most satisfactory. It was found desirable to employ one of the John P. King men and train him as supervisor, thus avoiding the natural antipathy toward an outsider. It was part of the agreement that all employees of this company should be subject to the same rules and supervision as those of the mill. This system was installed under the supervision of Industrial Stores, Inc., Atlanta, Ga., and since doing so, a canteen twice as large has been built.

A newly-designed and modern lunch-wagon in use at John P. King

CURRENT TEXTILE TOPICS ....

Talk of the Month

CONDITIONS in any economic sphere are destined never to follow a smooth path for more than a limited period. Some new elements always crop out after a prevailing tendency for some time, such as the unbroken rise of business in the cotton industry for about six months. Thus we had not only the normal seasonal slackening in December, but a period of mild unsettlement in the first two months of this year for cotton manufacturers when fundamentally the outlook appeared favorable to a new surge forward.

Extraneous elements conspicuous in the cotton mill situation

New and old elements came to the fore in the industry after the January spurt of business suggested that the resurge was under way. These embraced political developments and extraneous economic factors like the strikes and floods. The maritime strike, estimated to have cost approximately a billion dollars, and the General Motors strike, costing up in the hundreds of millions, were bound to have some disturbing influence in a widely ramified field of business.

Strikes Anticipate Prosperity

Floods may come in good or bad economic times. They are temporarily a factor of loss to business, but ultimately a creator of new demand for replacement. Strikes are a severe toll upon business, but indirectly they point to a rising tide of activity since they are futile unless prosperity is advancing. Thus weak spots in the picture gave signs of disappearing right after settlement of these great strikes, in the cotton goods market as elsewhere.

Commodity price advances in general were checked after the start of the year, but even this was healthy. Some products appeared to be in a runaway stage and, though not too high relative to normal, were getting out of alignment with the general situation at this point in the recovery. In the cotton gray goods market, printcloths had reached untenable premiums under pressure of quick demand for restoring inventories from depression to normal volume. When this pressure subsided, the inevitable disappearance of premiums began.

Before the adjustment had become too serious, the strike settlements came to create a better feeling everywhere. All commodity markets began to recover their equilibrium around the middle of February, indicating confidence in the underlying trend and acceptance of the recent unsteadiness as one of the inevitable corrective movements within a broad swing. Too fast a pace for a time means getting down to a walk for a spell.

This temporary check, so far as cotton manufacture is concerned, may prove to have been a salutary warning. Lurking behind the scenes all through the recovery has been the spectre of possible over-production. There appears to have been a tendency toward expansion in the printcloth field on buying that in some cases at least was in excess of indicated requirements; in other words of speculative character. The inevitable reaction was easing of prices and postponement of sound orders by buyers.

Extraneous elements of political nature, again conspicuous in their bearing of the economic field, are another warning against possible dangerous extension of mill operations. Self-regulation of the industry is the desirable thing. Yet President Roosevelt's program for the judiciary was hailed as the antecedent to plans for a restoration of the New Deal control measures invalidated by the Supreme Court.

Textile men were inclined to believe that the issue of the judiciary would absorb so much attention that measures of Federal regulation could hardly come before Congress in the current session. It was a widespread sentiment, moreover, industrial measures when considered would be general and that textiles would not be singled out for special attention. Yet while textile men were taking such attitude there came word from Washington that plans were under way for the first world conference on a single industry, textiles in April and that the President was believed to be aiming toward an international NRA program.

Recognized Need for Control

It is manifest that the political-economic phase of things is to be a dominant matter of consideration indefinitely or permanently in the cotton industry. At home, mill men hope for control by state rather than Federal action, but it is tacitly recognized what control there will be. The Japanese mission has brought a unique international situation into being, recognizing again and in a broader way the need for control But the April meeting suggests that the issue of political as against private economic control is also to come up on the international phase.

Decidedly interesting, as coming from a magazine of the rayon industry, is the estimate of textile fiber consumption in 1936 showing cotton registering the sharpest gain. The *Rayon Organon* states that consumption of rayon increased more rapidly from 1935 to 1936 than did any other fiber except cotton. For the first time, in 1936, the use of rayon filament yarn exceeded the consumption of apparel-class wool.

In the adjustment from three to four main textile fibers, cotton really has made an astonishing record. The staple continues to gain relatively in spite of lavish predictions for rayon, even to the extreme that synthetic fibers would some day replace natural. The *Organon* gives cotton a percentage of 81.9 for all textile fiber consumption in 1936, against 79.2 per cent in 1935. Wool's percentage, including carpet grades with which rayon does not compete, is second at 9.1

in 1936. Rayon has risen from 0.3 in 1920 to 7.6 per cent in 1936. Silk was 1.4 per cent in 1936, the lowest since 1923.

New England Mill Situation

COTTON mills of this district have had a moderately irregular business through the first part of the year, with little disturbance to the general trend. Backlogs have been heavy, bespeaking production on a broad scale for several months ahead. In fact owners of some looms have been committed into the summer and could not accept further orders. Even moderate business in other cases has been sufficient to relieve temporary signs of slackness.

Finished goods have lost some of their abnormal character of trading, as was certain to be the case, but business has continued to be good and stability of the market unshaken. In this section the mills are strong for holding production to orders, both because this is considered the way to keep on a good trading footing with buyers and because the specialized lines have a temporary market not carrying over into another season.

Consumer Trade Active

While some unsettlement has occurred in selling of gray goods, belief that the broad trend is assured finds support in the persistent absorption of finished merchandise. It even appears that buyers have not re-restored inventories to a desired level, so active has been consumer trade, and call for quick shipments has continued to exceed capacity of producers. The soundness of the outlook is demonstrated in firm demand for goods on contract, with no noticeable demand for deferring of shipments.

Textiles have done much toward restoring business activity generally in New England to the peak for many years. The New England Council, in its latest index, gives general activity for December at 15.7 per cent above that month in 1935 and at 103.7 per cent of an estimated normal. This is the best figure for December since 1928, when the index was 111.4 per cent of normal.

Textile activity, it is reported, was greater than in 1929 and well above the 1923-1925 average. Most branches of the industry made money in 1936, it was added, and some of the profits were being devoted to plant modernization. Cotton mill activity was at a rate seldom exceeded, with December the highest of that month for eight years.

In Massachusetts, the State Department of Labor and Industries reported that operating time and wage rates both increased to a marked degree for December among wool manufacturing, cotton industrial and textile dyeing and finishing plants. Marked increase also was reported in the manufacture of silk and rayon goods, as well as textile machinery. Cotton goods mills made a one per cent increase in employment and 11 per cent in wages.

"The large number of dividends by New England textile mills in December," said Charles S. Kelley, Jr., of Sanford & Kelley, New Bedford specialists in textile stocks, "were in many cases for special reasons." Besides a desire in some cases to give a return to stockholders who had had nothing for 5 years or more, there were arrears to be paid up or penalty under the surplus tax law to be suffered.

Business for 1936 Gratifying

Profits increased rapidly from the summer through the end of 1936. These not only were reflected in the December payments, but have continued to be made extensively in the first part of the current calendar year. From Fall River, New Bedford and Lowell have come reports recently of gratifying results on the whole for the year 1936. Earnings in one plant gained nearly 5 times, the Boott Mills of Lowell showing $3.15 a share versus 66 cents in 1935.

Quissett Mills, New Bedford, which on Feb. 15 paid $1, the first dividend since 1932, had a final quarter in 1936 which out balanced losses of the first three quarters for a small profit on the year. Stockholders at the annual meeting were informed that the outlook on orders in hand was much the best for several years and the plant was reported operating at full capacity with every sign of holding to that scale a good while.

Several Fall River mills found the situation so much improved last year that they began making improvements that mounted into tens of thousands of dollars. The Pilgrim Mills spent $85,500 for new machinery and the Sagamore Manufacturing Company made plant changes that cost $59,592. Another case was $8,000 spent on new equipment by the Shawmut Mills.

S. Bruce Smart, president of B. B. & R. Knight Corporation in Rhode Island, in a statement to stockholders in February, announced a net profit for the year, although "the printing and finishing division, in which we are particularly interested, did not benefit from the upturn in business to the same degree as some other sections of the industry." He said that another attempt should soon be made to effect a financial reorganization so that directors could adopt a dividend policy so soon as the action was justified.

Speaking of the Japanese mission Russell T. Fisher, president of the National Association of Cotton Manufacturers, said of the early reports: "That an unofficial agreement has been reached is eloquent testimony to the ability of Dr. Murchison and the other members of his committee and a step in the right direction. Any agreement that will lessen the threat of unemployment and losses due to low wage scales is a start in the right direction."

Co-Ordinated Rate Guide

Consolidated Guide Corporation, Chicago, Ill., has released the *Co-ordinated Rate Guide*, a compilation that is a time-saver for all shippers. It is bound in heavy boards and contains 1,350 pages, most of which contain 3,850 rates totaling millions of rate quotation. With rate-finding now reduced to such a simple process that any business man or his stenographer can use it, the publishers expect that industries may easily explore new sales territories, and effect many shipping economies in their buying.

"THE SITUATION"—as Seen Across an Executive's Desk

February 19, 1937

THE SECOND month of the year and cotton goods sales being made for the second half of the year is a spectacular boom development in the cotton textile industry for 1937. Notable trend in this direction is that customers are not dickering as to price, but specifying quality and above all *deliveries*. This is the time for any smart manufacturer to show his merchandising ability for if he sticks to his price, it including all costs and some profit, he will get it. The buying wave which is here now and which in all probability will continue through March can bring a real measure of success to the mills, for as the prices are set during this buying period, so will your statements read at the end of the year. Have you ever stopped to think about that?

Potential Sales Volume Strong

From important retail centers and from Worth street we get the impression that there is a fair amount of business waiting to be turned over within the next few weeks: the primary markets in the domestic groups are very strong; wholesalers in various sections of the country reflect an active trade with gains on the horizon; and the unusual activity in the house dress manufacturing trade all point to phenomenal potential sales volume for the spring months.

These things can be laid to the continued increasing buying power of the consumer as the laboring classes take on additional pay increases, strike resultant or otherwise, plus the incentive given to cotton goods buying by the splendid styling and advertising work being done by finished goods people. Among the latter we have the recent examples of Cotton Futures of 1937, the annual fashion show put on by the house dress manufacturers' association which played to a capacity audience at the Waldorf-Astoria and which brought a new element of fashion-thought to the wash-dress rack; the individual fashion shows on cotton frocks such as that given a few weeks ago by Ameritex; and the unusually attractive spring swatch book being put out by the Cotton-Textile Institute, 50,000 copies of which go to stores, schools, home economic classes, etc.

Single-Handed Advertising

We have always held out that the basic principle of greater cotton sales was the proper fashion work. This year we are more and more impressed with this and feel that cotton is better established today as a fashion item than ever before. I know a man who is distributor for Coca-Cola. He never serves anything else as a chaser or as a light refreshing drink in his home; he doesn't send flowers to his sick friends, he sends Coca-Cola; he never lets a church sociable slip by without donating a quota of Coca-Cola. He believes in personal advertising of the product he puts out and that is just one of the reasons that Coca-Cola is the national drink. The agents prctice what they preach! If all the cotton mill men would make their wives and daughters, either through flattery or compulsion, dress in cottons in the summer time they would get a direct result of their one-man promotion. I have long since converted my family to cotton fashions and I am mighty proud of them and the way they look when we step out together. I would be ashamed to manufacture a product that my own folks couldn't use. Why not sit down and have a heart to heart talk with your women folks and tell them that you don't OK any summertime clothing bills unless they are for cotton clothes? It's just a suggestion but it may work into something big.

Domestics are showing the result of better styling too, and sales are picking up and holding up there. At the Chicago show in February nearly three-quarters of a million dollars worth of cotton goods were booked in one week and the following week at the similar show in New York a proportionate amount was chalked up.

This sales volume while showing up more spectacularly in the finished goods is reflected to an equal degree in the yarn mills. For example, weave mills which have during the past few years sold considerable amounts of sale yarn are now buying similar amounts from yarn producing plants, and as a result yarn mills find weave plants furnish them a nice backlog of orders.

Cotton Promotions to Continue

That cotton promotions, both associational and private, will continue in a bigger and better way is evidenced by the remarkable progress made by the Cotton-Textile Institute's two-way cent-a-bale program. A majority of the cotton mills have signed up for this plan and the largest of the raw cotton shippers in the country are playing along with them on an equal basis. Others, such as future brokerage houses, have become so interested in the scheme that they volunteered to contribute stipulated amounts on their futures contracts. This is enthusiasm of the highest order and from it should grow great things.

The first meeting of the committee selected for the Cotton Promotion work by the institute, consisting of: Robert Mayer, president, American Cotton Shippers Association (Dallas, Texas); Leland Anderson of Anderson & Clayton & Co. (New York City); W. S. Dowdell, Weil Brothers (New York City); B. T. Lowe, B. T. Lowe Co., (Augusta, Ga.); Oscar Johnston, Delta & Pine Land Co. (Scott, Miss.) representing the Staple Cotton Cooperative Association, Greenwood, Miss.); C. G. Henry, American Cotton Cooperative Association, (New Orleans, La.); Dr. C. T. Murchison, president Cotton-Textile Institute, Inc. (New York City); W. R. Bell, President, Association of Cotton Textile Merchants, 40 Worth St., (New York City); Donald Comer, president, American Cotton Manufacturers Association, (Sylacauga, Ala.); Russell Fisher, president, National Association of Cotton Mfgrs., 80 Federal St., (Boston, Mass.); a vice-president of the Cotton-Textile Institute, as yet unnamed; J. C. Rob-

erts. Textiles-Inc., Gastonia, N. C., representing carded-combed sales yarn groups; was held at the Washington office of the Cotton Textile Institute on February 18th at which time plans were promulgated for the operation of the plan.

You see, it's just a circle. Cotton promotion work and styling have helped to create a bigger cotton market—for instance, cotton consumption set a new all-time high for January this last month when it reached 678,064 bales. With this enormous production we cannot afford to let any opportunity slip by without urging continued use of cotton for we must remember always to balance consumption with output. The only way we can hope to keep that equation during the years to come is to promote our goods. We harp on that, but it is a subject worthy of harping. It is important now, and will continue to be important as time goes on. Promote by individual advertising! Promote by personal use! Promote by co-operation with the Cotton-Textile Institute's new-uses department!

Legislative Hang-Overs

There are plenty of sick headaches these days. As soon as Congress convenes we start taking aspirin, but it doesn't keep the textile legislation from getting into our hair. But, because unless we know about them we cannot fight for 'em or agin 'em it if a good thing to look at the bill of fare and see what is on tap for us. First we have an entree' of the left overs from last year: The Ellenbogen Bill being foremost among them. However, I came back from Washington last week greatly encouraged over things up there. There is no doubt but that Mr. Roosevelt knows that too short working hours and too high wages will stifle prosperity instead of encouraging it. By raising his minimum wage to $18 and asking for the 35 hour maximum work-week it looks like Mr. Ellenbogen hung himself. The president is not apt to allow any bill to go through which provides for less than a 40-hour week and a wage which is conducive to permanent recovery. It's good to drink milk when you can get it, but when the cow goes dry it's just too bad! Realizing that the president knows that, I have taken that load off my mind, plumped up my pillows at night and slept soundly.

The Robinson-Patman Bill is also a left-over, although it was passed last year. It bothers us because it has so many novel and difficult questions as to whether practices which have long been regarded as proper may not now be prohibited. Those questions, which can only be answered by administrative rulings of the Federal Trade Commission and by interpretative decisions by the courts, meanwhile remain entirely open and there is a substantial difference of opinion among attorneys as to how many of them will ultimately be resolved. Some attempts have been made by both yarn and cloth customers to have mills invoices stamped with a clause to the effect that the mill guarantees conformity to the Robinson-Patman Act. But in the condition of uncertainty, regarding that act, which now exists, it is unreasonable for a customer to demand that the seller undertake to bind itself as to a future interpretation of law of a nature which cannot now be foreseen. Any obligation is bad enough to get off one's shoulders, but a blind obligation is something one should not be expected to take on.

The Omnibus Bill

Other bits of intriguing new legislation affecting cotton textile plants are the O'Mahoney Licensing Bill and the Borah Bill. The former embodies practically all of the features of the National Industrial Recovery Act and the National Labor Relations Act, and as a means of carrying out its purposes, requires the licensing of all corporations and individuals engaged in commerce, which is broadly defined to include not merely transportation but also manufacturing and production, activities which the Supreme Court has on a number of occasions held not to be within the regulatory powers of Congress. The bill provides drastic penalties for its enforcement, consisting of fines running as high as $10,000 and imprisonment for a maximum number of 5 years, and in addition provides for the revocation of licenses upon the slightest violation. It contains a most comprehensive scheme for Federal regulation of industry. This bill is dangerous and because it has received little publicity the textile industry has taken no interest in it. By not protesting it Congress is very apt to get the idea that we are for it, which would indeed be most unfortunate.

The Borah Bill provides for the federal licensing of corporations engaged in interstate or foreign commerce. As defined in the bill, interstate commerce would apparently include cotton manufacturing. In order to secure a license, application would have to be made to the Federal Trade Commission. The Commission would require complete information concerning organization and financial structure, character of transactions, terms, position, rights and privileges of different classes of securities, personnel and salaries of management, etc. Annual reports as well as any special reports the Commission might require, would be compulsory, and the Commission would be empowered to suspend or revoke any license, when, in their opinion, any provision of the Act had been violated. This bill and the O'Mahoney bill are both before the Committee on Judiciary at this writing. When you read this, find out what the status is of each, and wire your congressmen whether or not you oppose it. I presume that you will oppose both for they will embody the very things we were glad to be rid of during the NRA days.

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Industrial Rayon Opens New Showroom and Office

Industrial Rayon Corporation, Cleveland, O., has made an announcement to the trade in general that a new showroom and office has been opened at 964 Merchandise Mart, Chicago, Ill., in which will be featured "Fabrics by Industrial". Any manufacturer, retail buyer and merchandise manager is welcome to visit this display. This type of sales promotion is a valuable aid to the entire knitted fabric industry because it will create in the minds of merchandise managers and their buyers a wider conception of the many possibilities that can be obtained in the use of tubular knit fabric, is the opinion of the company.

WHAT THE SOUTHERN MILLS ARE DOING

CAROLINA COTTON & WOOLEN MILLS, manufacturing Division of Marshall Field & Company, Spray, N. C., has let a contract to the Southeastern Construction Company, Charlotte, N. C., for the erection of three structures, two at Spray and one at Draper, N. C., for a total price of $253,200. Work has already begun and will be completed by June 15. A two-story building will be erected at Draper, 156x310 feet, which will house a sheeting mill addition. A four-story addition to a Spray warehouse will be 140x140 feet, and another building to house finishing processes will be three stories high, 63x100 feet, with Robert & Company, Inc., Atlanta, Ga., as engineers.

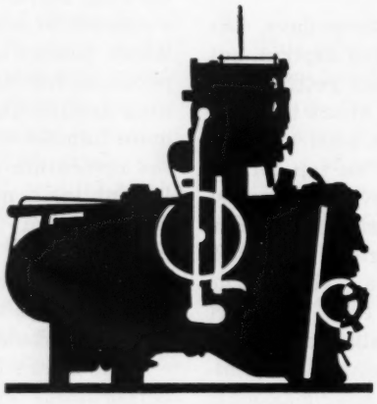
Sayles Biltmore Bleacheries, Inc., Biltmore, N. C., is installing new equipment at its plant at a cost of between $25,000 and $30,000. The number of employees of the plant was increased approximately 15 per cent last year.

Boaz (Ala.) Twine Mill will build an addition to its plant to house a new unit of 1800 spindles.

Lanett Bleachery & Dye Works, Lanett, Ala., a division of the West Point Manufacturing Company, has begun work on a $65,000 annex to its 5-story cloth warehouse.

LaFayette (Ga.) Cotton Mills have added $70,000 worth of new machinery lately.

Martha Mills, a division of the B. F. Goodrich Company, Thomaston, Ga., has awarded a contract to B. H. Butts, Jr., construction engineer, for the erection of 57 residence buildings in its village.



West Point (Ga.) Manufacturing Company, has converted the old plant at Riverview, Ala., into a towel mill at a cost of $150,000.

Central Falls (N. C.) Manufacturing Company has begun work on an addition to its present building which will provide about 10,000 square feet of floor space, to be used primarily as a warehouse.

Ragan Spinning Company, Gastonia, N. C., has begun work on a new unit to its plant, 135x200 feet, and new machinery has already been purchased.

Shuford Mill Company, Hickory, N. C., is installing 24 new spinning frames to replace the older type that are now in use. Some used machinery is also being installed in this mill.

Woodlawn Plant, American Yarn & Processing Company, Mount Holly, N. C., has begun work on a $35,000 addition to its present plant. The addition will house 4,000 spindles of new make, 16 cards, and 6 combers.

Entwistle Manufacturing Co., Plant No. 3, formerly the old Roberdel Mill, Rockingham, N. C., has begun operations. The mill has been overhauled and new 40-inch looms installed.

Plans are being made to re-open the Wilbur Cotton Mills, Inc., Troy, N. C. The plant has been idle for four years.

Joanna Cotton Mills, Goldville, S. C., has adopted an expansion program which will include an addition to the present plant and the installation of 450 new looms.

Rock Hill (S. C.) Printing & Finishing Company will install a new boiler at a cost of $75,000, and an addition to the present boiler room will be made.

Cherokee Hosiery Mills, Cleveland, Tenn., are installing 10 new knitting machines.

Delano Spinning Mills, Pendergast, Tenn., formerly operated by the Alpha Spinning Mills, are expected to resume operations soon. Employees are being sought.

In anticipation of the location of a unit of Burlington Mills, Inc., Greensboro, N. C., at Galax, Va., a corporation has been formed and will erect a building to house the new mill. Work on a brick structure 100x300 feet is expected to begin shortly.

Lanett Mill, a division of West Point (Ga.) Manufacturing Company, has installed 9 nickel-clad steel size kettles. The steel was furnished by International Nickel Company, Inc., New York.

Kingsboro Silk Mills, Inc., Gloversville, N. Y., is planning to open a $60,000 mill in one of the southern states and will manufacture tricot and Milanese cloth.

Cross Cotton Yarn Mill, Marion, N. C., is expected to install new machinery which will increase the present production by 20 per cent.

Juvenile Hosiery Mills, Inc., Valleybrook Drive (Greensboro, N. C.) will increase their manufacturing space by the addition of a brick and steel wing 100x65 feet. The contract for this has been let to Charles W. Angle, Inc., Greensboro. It is planned to move the storage warehouse to make place for the addition.

James Hosiery Mills, Greeneville, Tenn., has received full-fashioned hosiery machinery which will be installed immediately. A total of 15 full-fashioned knitting machines will be erected in the plant.

Interstate Hosiery Mill, which operates mills in Philadelphia and Lansdale, Pa., and Bloomfield, N. J., has acquired another full-fashioned plant in Philadelphia. The machines in this plant are modified gauge high speed.

The Viscose Company has acquired a site at Front Royal, Va., where it is planned to build a large viscose process rayon yarn plant.

Aberfoyle, Inc., a subsidiary of Aberfoyle Manufacturing Company, Chester, Pa., is locating a silk and rayon weaving plant at Norfolk, Va. The power load at this plant is to be 400 kw.

The Spotlight Hosiery Company, Rome, Ga., a new firm, is having machinery installed and operations will begin shortly.

Western Shade Cloth Company's mill at Goldville, S. C., has contracted for the construction of a two-story building, 250x75 feet. In this addition will be housed the plant's picker room and also, additional looms will be installed.

5-R DRIVES HIGH-SPEED TEXTILE MACHINES

AT 25% TO 50% LOWER TENSION!

HERE are the reasons why you should immediately investigate the remarkable new Goodyear 5-R Belt—the only square-edged flat fabric transmission belt in the world with a PERMANENT minimum ratio of tension, or "R," of 5:

HIGHEST COEFFICIENT OF FRICTION—*a tenacious pulley-grip unsurpassed in any other type of belt!*

PERMANENT FACE ADHESION—*high face adhesion may be obtained temporarily by recourse to belt dressing or use of rosinous compounds. 5-R is distinctive for the permanence of its adhesion value. 5-R surface will not crumble, ball up or chatter.*

OPERATES AT SLACK TENSION—*approximately 25% to 50% less tension than other belts; greatly lessens strain on both belt and fasteners with corresponding increase in belt life!*

REDUCES BEARING PRESSURES—*lengthens bearing life, lessens lubrication problems, lowers frictional losses and cuts power costs.*

The G. T. M.—Goodyear Technical Man—will be glad to explain how 5-R's unequaled efficiency and economy will save money on any drive in your plant. To bring him, write Goodyear, Akron, Ohio, or Los Angeles, California—or the nearest Goodyear Mechanical Rubber Goods Distributor.

LOOK AT THE DIFFERENCE
100 LBS. effective tension
SLACK SIDE TENSION
Ordinary Rubber Belt —100 lbs.
Goodyear 5-R Belt—25 lbs.
TIGHT SIDE TENSION
Ordinary Rubber Belt—200 lbs.
Goodyear 5-R Belt—125 lbs.
The new Goodyear 5-R Belt is made in roll lots in all sizes and widths; easily applied with any standard fastener.

BELTS
MOLDED GOODS
HOSE
PACKING
Made by the makers of Goodyear Tires

THE GREATEST NAME IN RUBBER
GOODYEAR

Goodman Hosiery Mill will be established at Hickory, N. C., and will be housed in the building formerly owned by Brooks and Goodman.

Crisp Hosiery Mills, Cordele, Ga., a newly-formed company, will begin operations shortly.

Caswell Cotton Mills, Kinston, N. C., have begun operations after being idle for 25 months.

Corinth (Miss.) Hosiery Mill has begun operations and new machinery is being erected. Full operations will be in evidence soon.

American Silk Mills, Orange, Va., is planning another addition to its plant which will cost from $40,000 to $60,000.

COMMENT ON THE COTTON MARKET

New Orleans, February 16th, 1937.

THE COTTON market had much to contend with during the past month, such as flood developments, strikes in the industrial centers, weakness in the stock market recently, the release of some loan cotton, transferring from near to distant positions and liquidation on the part of tired holders. In the latter part of January values bulged to new high levels for thus far this season. Subsequently the trend of prices was downward, but finals for the period show no appreciable change compared with one month ago. There was not much activity in the market, however, owing to the uncertainty as to the nature of what the new crop program will be. The trade appears to be at sea as to how much loan cotton was sold, but the idea seems to prevail that sales were rather small. A favorable development was the settlement of the marine strike, which was reflected in some improvement in exports of raw cotton from the United States, and while spinners' takings of American of late have not been encouraging, the total for thus far this season is much greater than for the corresponding time last season. In the goods markets concessions in print cloths were reported, but a revival in the demand gave tone to the market in which the demand for other descriptions continued good. Another favorable development was the settlement of the General Motors strike. As yet Washington has given no hint of any impending change in the regulations governing the distribution of loan cotton, and there is nothing new at this time as regards the farm legislative program for 1937.

CENSUS REPORT

United States— Bales—	This season	Last season
Consumption of lint, January	678,000	590,000
Consumption of lint, 6 months	3,848,000	3,014,000
Mill stocks, January 31st	2,066,000	1,436,000
Stocks in public storage and warehouses, January 31st	6,779,000	7,845,000
Stocks in mills, public storage and warehouses, January 31st	8,845,000	9,281,000
Stocks in mills, public storage and warehouses, December 31st	9,789,000	9,820,000
Active spindles during January	24,364,000	23,323,000
Consumption of lint in Cotton Growing States, January	565,000	497,000
In New England States	92,000	78,000
In All Other States	21,000	15,000
In the United States	678,000	590,000
Consumption of lint in Cotton Growing States, 6 months	3,219,000	2,527,000
In New England States	508,000	401,000
In All Other States	121,000	86,000
In the United States	3,848,000	3,014,000

BRITISH BOARD OF TRADE REPORT FOR JANUARY

Year— 1937	1936	1935
Exports of yarn, pounds 14,000,000	13,000,000	13,000,000
Exports of cloth, yards 161,000,000	167,000,000	187,000,000

AMERICAN COTTON

August 1st to February 12th— Bales— This season	Last season
Brought into sight (marketed)	11,482,000	10,895,000
Exports from the United States, including Canada	3,845,000	4,347,000
Spinners takings world	8,721,000	7,782,000
Stock at all United States ports, February 12th	2,294,000	2,478,000

WORLD'S VISIBLE SUPPLY OF COTTON, FEBRUARY 12TH

Bales—	This year	Last year
American	6,177,000	6,617,000
Other kinds	2,319,000	1,596,000
World	8,496,000	8,213,000

Income from Farm Products Increase

The agricultural department, Washington, recently reported that cash income from the sale of farm products increased in 44 states compared with 1935. The national total was $7,578,000,000 compared with $6,507,000,000 in 1935, $6,792,000,000 in 1934 and $4,955,000,000 in 1933. States in which income was lower were North Carolina, Oklahoma, Montana and Arizona.

Corporative Profits in 1936 Were the Best in Six Years

The foregoing favorable agricultural developments are reflected in the improvement in industrial earnings, viz: $873,958,105 earned by the first 130 major companies to report 1936 results was the best in six years. Profits of the group were 47.8 per cent above the previous year. Heavy industry continued to lead.

Trade Outlook for the Future Looks Bright

With the apparent need of larger crops there is likely to be much activity on the farms in the West and in the South, which would result in more employment of field hands. With the hope of larger crops and good prices, farmers' incomes may be increased to larger proportions, perhaps greater than they were in 1936. This together with industrial activity in the North and East, plus higher wages in many instances, would make for a greater purchasing power on the part of the masses, which would probably result in a further expansion of business in 1937, in which the cotton textile trade would likely continue to participate largely.

Crop Preparations in the Cotton Belt

Much interest is centered in the agricultural situation, as developments in this respect will probably have much influence on future trade and values. Much, of course, will likely depend upon Washington's new crop plans. Farm work made progress, with indications pointing to the probability of an increase in the acreage, which would be apt to receive intensified cultivation, weather permitting. There is said to be a large demand for mules and farm implements, and there is likely to be a liberal use of fertilizers, with the disposition to plant a better quality of seed. There appears to be moisture sufficient in the soil for present requirements, except, perhaps in parts of the northern portion of the western belt.

Spots

Trade has been slow of late, due probably to light offerings, and it is said that very little loan cotton was moved, attributed to the high basis and difficult terms of sale. However, the demand is usually quiet at this season of the year, and it is possible, if not probable that there may be a revival in the inquiry ere long, especially if selling terms are modified.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year— 1937	1936	1935	1934	Normal
January 2.16	0.74	1.49	3.72	1.69
Nov. 1st to Jan. 31st 5.52	5.78	7.26	6.76	6.15

American Cotton Manufacturers to Meet in Washington May 12-14

President Comer and the policy committee have decided to hold the 41st convention of the American Cotton Manufacturers Association at the Mayflower Hotel, Washington, D. C., May 12-13-14, 1937. This means that the board of government will hold its regular pre-convention meeting at 1 o'clock luncheon on Wednesday, May 12. The convention proper will open at 10 A. M. on Thursday, May 13, in the convention hall, and will have two sessions on that day followed by a banquet Thursday night. On Friday, May 14th, at 10 A. M., the concluding session will be held. It is requested that reservations be made at once. W. M. McLaurine is secretary and treasurer of the association; his address is 1206 First National Bank Building, Charlotte, N. C.

MILLS SPINNING TIRE FABRIC YARN NOW OPERATE

MORE THAN ¼ MILLION ACTIVE SPINDLES

ON ARMSTRONG'S CORK COTS

NO matter what type of yarn you spin you can save money—enjoy many advantages—with Armstrong's Seamless Cork Cots. The total spindlage now operating on cork in all branches of the industry prove this! Mills spinning tire fabric yarn, for instance, now have 290,768 active spindles on Armstrong's Seamless Cork Cots.

The cost of these cots is no greater than that of any other roll covering material. Yet they bring you far greater savings. They're more resilient and more uniform. They mean low assembling costs with no waste. They last longer, require fewer roll changes. They spin a stronger, more uniform yarn. *And they reduce total roll covering costs 50% and more!*

It will pay you to get all the information about Armstrong's Seamless Cork Cots. Learn how they can aid in spinning *your* type of yarn. For detailed facts and figures ask your nearest Armstrong representative or write direct to Armstrong Cork Products Co., Textile Division, 923 Arch Street, Lancaster, Pennsylvania.

Visit the Armstrong Exhibit
SECTION 131 *First Floor*
Southern Textile Exposition, Greenville, S.C., April 5–10

FOR SPINNING AND CARDROOM ROLLS

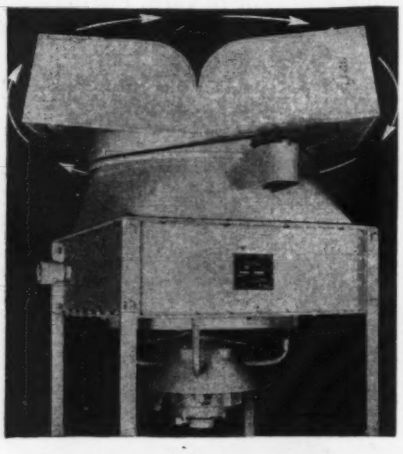
ARMSTRONG'S EXTRA CUSHION SEAMLESS CORK COTS

ARMSTRONG HAS MADE CORK PRODUCTS SINCE 1860

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

Unit Heater with Revolving Discharge

L. J. Wing Manufacturing Company, 154 W. 14th St., New York City, has developed a unit heater with a revolving discharge, which introduces a new principle in heat distribution giving results never before obtained, it is said. The moving air streams sweep



Unit Heater as Described

slowly around through 360 degrees, covering successively every direction. The air velocity is sufficient to carry the heat to the walls and remote corners. Furthermore, the constantly changing direction of flow causes the air to find its way around obstructions and thus every point is kept at a comfortable temperature. Uniform heating is accomplished even in rooms and plants which are especially difficult to heat. The directed air stream delivers the heat in the working area. Each part receives and stores heat as the warm streams pass around. The result is said to be steady and uniform warmth throughout the entire space.

Catalog on Rolling Grille

Cornell Iron Works, Inc., 36-20 13th St., Long Island City, N. Y., has published an 8-page catalog with illustrations, diagrams and full specifications on the new monogram design of rolling grille.

Folder by Flexrock

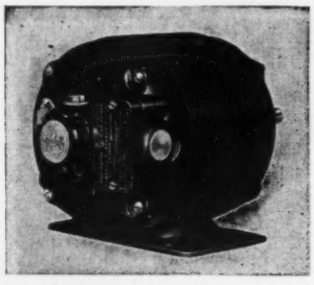
Flexrock Company, 800 N. Delaware Ave., Philadelphia, Pa., has released a four-page folder which brings out the salient points of Ruggedwear Resurfacer as well as all the dangers of rough, worn and broken concrete floors.

Round-Chart Potentiometer

The Bristol Company, Waterbury, Conn., introduces a new recording potentiometer of the round-chart type, known as the Pyromaster. This instrument requires no lubrication whatever and is said not to be affected by normal plant vibration. The pen is actuated in such a way as to follow changes in the measured quantity as they occur and at a rate dependent upon the rate of change.

Thermo-Tector for Fractional Horsepower Motors

General Electric Company, Schenectady, N. Y., has made available leaflet GEA-2369 which describes a new thermal overload switch for fractional horsepower motors, operating on line current and arranged for convenient mounting on the conduit or terminal box of the motor. It is completely self-contained and has no links or plugs to be replaced. Known as the "thermo-tector", the device automatically dis-



Thermo-Tector

connects the motor from the line when an overload occurs, and before the motor reaches a dangerous temperature. Then, when the motor has cooled, it is automatically reconnected to the line. The entire operation is repeated at a safe interval until the motor is freed of overload or is removed from the line. This thermo-tector is available in ratings for ac fractional horsepower motors having rated full-load currents from 1.3 to 10.4 amperes.

Report on Catalog Practice and Procedure

The National Industrial Advertisers Association, Inc., 100 East Ohio St., Chicago, Ill., has released a report on catalog practice and procedure. The committee has accomplished the difficult task of reducing to simple words the basic fundamentals regarding catalogs, of organizing a great deal of the available data on the subject and enumerating the many sides of the question in an impartial manner—thus preparing the way for straight thinking and further study and investigation along individual lines. Distribution to members is free, but other industrial advertising executives may obtain copies at the nominal price of $2.00.

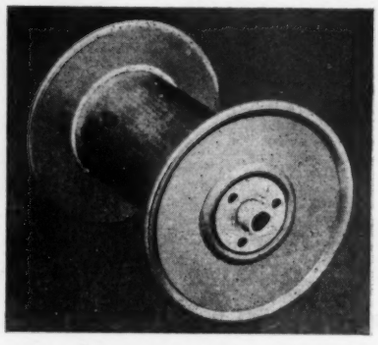
Unit Air Conditioning

Carbondale Division of Worthington Pump and Machinery Corp., Harrison, N. J., has announced a new line of unit air conditioners with a wide range of air and refrigeration capacities, which are described in bulletin No. 1122. The manufacturer states that these units are built on field-tested standardized designs. Each element is a complete and separable section in a compact cabinet, making assembly easy and speedy. One section contains the complete fan assembly with motor, another the complete coil and humidifying assembly, and another the base and cleaning elements. Any section may be shipped or handled separately.

All moving parts are readily accessible without dismantling the unit. The cabinet is constructed of heavy steel frames, coated inside and out with water-proof and sweat-proof insulation. The outside surfaces are finished in a rust-resisting enamel to present a smooth and attractive appearance.

Correction

The spool shown here is the Lestershire Spool and Manufacturing Company's, Johnson City, N. Y., stainless steel steaming bobbin, which was described on page 82 of the January issue of this publication. The spool accompanying the article was reproduced in error.



Steaming Bobbin

Institute Swatch Book

"Gala Cottons" is the keynote of The Cotton-Textile Institute's 1937 Spring and Summer swatch book, 20,000 copies of which are being distributed to teachers in high schools, colleges, and universities, and various other agents.

A *New* COMPLETE LINE OF LARGE PACKAGE TWISTERS

FOR COTTON, WOOL, SILK AND RAYON

No matter what the fibre, the count or the construction of your ply yarns we now have a twister that will meet your requirements.

These machines are designed to make large packages and therefore offer the advantages that go with this type of machine; increased production and lower twisting cost due to fewer doffs and lower costs in subsequent operations because of the large package, less knots, and the possible elimination of rewinding. What is your twisting problem?

Let us make recommendations

H & B AMERICAN MACHINE COMPANY
COTTON PREPARATORY AND SPINNING MACHINERY
PAWTUCKET, RHODE ISLAND

BOSTON OFFICE . . . . . 161 Devonshire Street
ATLANTA OFFICE . . . . . 815 Citizens & Southern National Bank Building
CHARLOTTE OFFICE . . . . . 1201-3 Johnston Building

• FEATURES •

1. Increase in ring diameter up to 50 percent or more.
2. Old spindle speeds maintained or increased.
3. Traverse increased as much as 5 inches over old standards.
4. Spindles designed for high speeds and heavy loads.
5. Pull of yarn from creel is free and unobstructed.
6. Gearing permits a wide range of twist.
7. New design tension device allows proper tension on tape, so as to insure steady spindle speed without undue strain on the spindle bolster.
8. Frames are sturdily built and properly balanced throughout to minimize vibration.

Catalog and Booklet by Morse Chain Co.

Morse Chain Company, Ithaca, N. Y., has distributed a booklet entitled *A Chain of Evidence* which gives directions for installing, operating, and lubricating Morse silent chain drives. The booklet is well illustrated. In the back of the booklet is a questionnaire page, which, if filled in and returned to the company, will give the company engineers the necessary information to design a chain drive. The company also released a catalog on the silent chain which contains valuable tables with the proper instructions on how to use them. Various Morse installations are pictured in the catalog.

Automatic Yarn Dryer

Proctor & Schwartz, Inc., 7th St. at Tabor Road, Philadelphia, Pa., has made available a folder describing its new invention which is said to revolutionize yarn drying. It is called the traveling skein protector. The device consists of a flexible material, hung skirt-fashion from the chain conveyor so that it travels with the poles and prevents the yarn from rubbing, whipping, fraying, snarling or soiling in its passage through the machine. This permits the full loading of every pole to its very ends, instead of leaving three or more inches of bare space at each end as is necessary with preceding types of dryers. Drying is much more rapid than is possible without the skein protector.

Hand Book of Building Maintenance

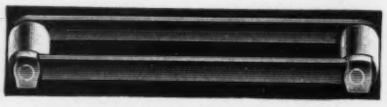
Flexrock Company, 800 N. Delaware Ave., Philadelphia, Pa., makers of the Flexrock material for repairing floors, has published a *Hand Book of Building Maintenance*, which is a ready reference for men responsible for the maintenance of industrial buildings and structures. It is said that this booklet should be on file in the engineer's office in every type industrial plant. This company, having specialized in manufacturing and dealing only in special cements, asphalts, and special products allied with concrete and building maintenance problems, is in a position to place before the building maintenance men an authoritative handbook on this subject.

Vibro-Insulators

The B. F. Goodrich Company, Akron, O., has developed vibro-insulators as a means of easing nervous strain and fatigue of employees working in buildings containing heavy machines. The insulators are for application on mechanical equipment to absorb shock and vibration, and to reduce noise. Because it is designed to carry loads in shear, the insulator has a sensitivity to movement which is said to be 8 times greater than if the rubber carried the load in compression. These vibro-insulators are described and illustrated in catalog section No. 7900.

Stehedco Dupe Spacer

Steel Heddle Manufacturing Company, Philadelphia, Pa., has come out with an interesting and marked improvement in the dupe spacer. This spacer, it is claimed, eliminates entirely the cutting and friction usually encountered in spacers not possessing the roller bearing action that this particular spacer possesses. The spacer



Dupe Spacer

has a needle rod on either side with rollers between them at both ends. The surface of the rollers extends beyond the ends of the needle rods which accounts for the elimination of friction. The rust resisting metal rollers turn on fixed bearings. The proper spacing for needles between the needle rods is assured by the manner in which the needle rods are locked at both ends by the nut locks.

Comparative Textile Chart

Scheuer & Company, 72 Leonard St., New York City, are distributing the 1936 edition of their Comparative Textile Chart. This compilation has come to be looked upon by the industry as an official record, being the only document of its kind issued. The chart includes a price history of 64x60, 38½-inch, 5.35, the standard cotton print cloth of the market. It covers the years 1926 to 1936 inclusive. The chart records the highest and the lowest average monthly mill margins, as well as the cloth and cotton price range during these years. These mill margins represent what mills receive for the services of manufacturing, financing and selling. A record of high and low prices of a wide range of staple cotton fabrics is also included. It is attractively printed and mounted on heavy cardboard suitable for framing.

Self-Operating Controller for Temperature and Pressure

C. J. Tagliabue Manufacturing Company, Park and Nostrand Avenues, Brooklyn, N. Y., have announced improvements in their 30-year-old line of self-operating temperature controllers, as described in their bulletin No. 1142. These improvements include an entirely new design of flexible seamless metal bellows and numerous minor refinements of design, material and workmanship. This new model is suitable for industrial applications where the close control obtainable with auxiliary power is not necessary or where the steam pressure available is less than 10 pounds per square inch. Temperature ranges are approximately 75 degrees between the limits of 30 degrees F. and 450 degrees F. The valves are semi-balanced, in sizes from ½-inch to 2 inches.

Transitorq Leaflet

New Departure, a division of General Motors Corporation, Bristol, Conn., has distributed a leaflet entitled "A Million Speeds" which describes and illustrates the variable speed Transitorq. This motor is said to give the exact speed required for intermittent chain movement on the machine. It is said to have fingertip control, positive drive, high starting torque, and contains no belts or gears or parts to replace. The lubrication is automatic, having only one spot at which to add oil. An illustration included in the leaflet is the Transitorq as applied to a Super-Sanforizing machine.

Leaflets by McCollum Hoist

McCollum Hoist & Manufacturing Company, Downers Grove, Ill., has made available bulletins No. 101 and No. HH2, the former describing the improved universal electric hoist and the latter ball-bearing spur-geared chain hoists. Capacity tables are given with operating speeds and price included.

Folder by Goodyear

The Goodyear Tire & Rubber Company, Akron, O., has distributed a folder on how research in rubber contributes to modern ways of living. It lists a number of ways in which the unprecedented consumption of rubber has come about. Research and development work were never more important to the rubber industry than at the present time, states the script.

Bulletin by Standard Conveyor

Standard Conveyor Company, North St., St. Paul, Minn., has issued a new bulletin describing its standard piler conveyors and combination piler conveyors. This equipment employs an endless carrying apron supported on an adjustable boom to enable piling materials to heights of 30 feet or greater. The equipment, which is portable, enables easier handling of materials in warehouses, mills, industrial plants, and wholesale houses.

New Diaphragm Operated Multi-Pointer Gauge

Bailey Meter Company, 1050 Ivanhoe Road, Cleveland, O., recently released a bulletin describing a new diaphragm operated "multi-pointer gage" for boiler-room service. Of paramount importance in this new development is the material from which it is made, which is resistant to oil, acid, caustic, and heat. It is said to possess exceptional flexibility with strength far in excess of animals' skins and tissues of the goldbeater type. This unit consists essentially of a flat calibrated spring, a sealed link, and a power diaphragm, the weight of which is carried on a second link pivoted at one end on the calibrated spring and at the other end on the sealed link. The area of the diaphragm is 20 square inches, thereby insuring sensitive, stable, and accurate operation. They may be removed and replaced or interchanged without returning the unit to the factory and without danger of wrinkling.

Folders on Dyestuffs

E. I. Du Pont de Nemours & Company, Inc., Wilmington, Del., Dyestuff Division, has published several folders giving the properties, and dyeing instructions for several new dyes. The folders, as usual, are in such a form that they may be filed for reference. Samples of cotton and rayon yarns are included. The dyes described in the folders are Ponsol Blue BF Double Paste, a vat color; Ponsol Golden Orange 4G Paste, a vat color; and Sulfogene Carbon MCF Grains, Sulfogene Carbon Supra CF Grains, Sulfogene Carbon 8GCF Grains, and Sulfogene Red Brown 6RCF, all sulfur colors.

Folder on Materials Handling Equipment by Lewis-Shepard

Lewis-Shepard Company, 175 Walnut St., Watertown, Mass., has distributed a small colored folder, No. 321, on materials handling equipment used for handling barrels, drums, carboys, cartons, cases, etc. Illustrations are given in the folder of lift trucks, lift truck platforms, floor trucks, stackers, portable elevators, and barrel racks.

New Pole Mounted Capacitor

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has announced a new type of weatherproof, steel clad, hermetically sealed 15 kva capacitor unit suitable for pole mounting on distribution circuits. These units contain an internal discharge device and are provided with means of mounting on brackets to crossarms or direct to poles, or in groups of four on single angle iron racks, making possible inexpensive installations up to 180 kva on one pair of crossarms. Standard distribution transformer tests have been adopted for these new capacitor units and bushing characteristics have been made to conform to current practice with transformers. Provision is made in the terminal design on the higher voltage ratings to eliminate radio interference.

Linestarters and Diffuser

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has two leaflets describing De-ion combination linestarters and De-ion nonreversing linestarters. Sizes and ratings are available, distinctive features and applications of which are described

Glassteel Diffuser

in the leaflets. The company's glassteel diffuser is designed to properly distribute the light from the 250-watt high intensity mercury lamp where the mounting height is under 18 feet. The unit is especially suitable for lighting machine shops, plating, and polishing rooms.

Alemite Industrial Catalog

The Alemite Division of Stewart-Warner Corporation, Chicago, has published its 1937 industrial catalog, *Alemite Controlled Lubrication*. In 56 pages is presented the entire range of Alemite's industrial equipment—hand guns, power-operated units, fittings, hose, valves, meters, etc. The book is printed in two colors and is profusely illustrated with photographs, drawings, and diagrams. An interesting feature is the great number of photographs of Alemite equipment in actual use in many different types of industries, which were taken on an extensive trip sponsored last year by Alemite.

Factory Lighting Manual

Benjamin Electric Manufacturing Company, Des Plaines, Ill., has released a new 36-page handbook entitled, *A Manual of Factory Lighting Practice*, which provides the plant operating executive with a complete treatise covering the commonly encountered problems of factory lighting and their correct solution. It contains authoritative engineering information on practical, easy-to-apply methods of fitting the lighting to the seeing requirements of each individual operation in the plant. Also discussed are 30 common lighting problems found in the various operations and locations of the average plant and given are definite recommendations, installation of diagrams, and equipment specifications for their scientific solution. The manual is written in plain, non-technical language and is copiously illustrated.

Booklet by Esterline-Angus

The Esterline-Angus Company, Indianapolis, Ind., specialists in the manufacture of graphic instruments, has published a booklet entitled *Solving Industrial Crimes* which gives a skit showing how graphic instruments saved money for one company. Also included are listings of various mills and plants using the instruments and their application to the problems arising within these plants.

Rubberizing Compound Requires No Primer

Selv-Vulcanizing Rubber Company, 605 W. Washington Blvd., Chicago, Ill., manufacturers of self-curing rubber plastics and liquids for protection against corrosion and abrasion, has carried on an exhaustive research and is now announcing Selfvulc Insulator, a rubber compound which incorporates the quality of a primer with a self-curing, cold-curing rubber which can be applied by unskilled labor by dipping, spraying, or by hand brushing. The new product is said to make a steadfast bond in one application, but repeat coats to any desired thickness may be added. A vulcanizing period of one hour is all that is required for first or following coats.

Leaflets by Railway Express

Railway Express Agency, 230 Park Ave., New York, has distributed two interesting leaflets entitled "C.O.D. by R.E.A." and "Railway Express Solves My Collection Problems". These leaflets give a dependable manner in which to get rid of trouble and list the advantages of c.o.d. service.

Contraction Chart

Cox & Fuller, consulting textile specialists, 320 Broadway, New York City, have released a graph showing the turns per inch and the contraction and yardage on viscose rayon yarn. This is plotted for 75, 100, 125, 150, 200, and 300 deniers.

Cubicle-Type Switchgear

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has announced a publication entitled *Cubicle Type Switchgear*, which describes the switchgear, a manually or electrically-operated breaker for indoor service. Completely factory assembled for installation, the cubicles are available in sizes from 200 to 2,000 amperes, 2500 to 15,000 volts with interrupted ratings from 20,000 to 500,000 kva. They are for use in central station main and auxiliary circuits.

Circuit Breakers

General Electric Company has released a folder descriptive of and illustrating its type AF-1 circuit breakers for office buildings and industrials. This circuit breaker provides positive control and protection for building and industrial circuits. It is for use in panelboards and other load centers as a modern substitute for fuses and fused switches. Its totally enclosed construction eliminates the fire hazard, assures the safety of operators, and discourages tampering.

Manual By U. S. Rubber

United States Rubber Products, Inc., 1790 Broadway, New York City, has issued a 112-page manual on the most efficient application of industrial packings to the specific purposes for which they were designed. This comprehensive manual is to assist engineers in properly adapting the various U. S. packings to their specific needs. It gives complete engineering data indicating the various characteristics of each packing.

Lift Truck with Pneumatic Tires

The Yale & Towne Manufacturing Company, 4530 Tacony Street, Philadelphia, Pa., have made available a lift truck with pneumatic tires which is said to handle goods with little vibration. The tires provide a smooth ride for fragile goods up to 1,500 pounds in weight. The truck is especially adjusted to ease the loaded skid platform to the floor.

Odor Adsorbers

Consolidated Air Conditioning Corporation, 114 East 32nd St., New York City, has published recently a booklet entitled *Consolidated Odor Adsorbers in Air Conditioning*, which covers quite completely the question of cost of operating an air conditioning system. The large savings which may be effected by use of the adsorbers is outlined and a table of these savings for various air volumes is included.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

General Dyestuff Corporation in New Home

General Dyestuff Corporation has prepared an attractive brochure showing views of its new home at 435 Hudson St., New York City. This building is representative of the latest and best in modern architecture and is designed to be as satisfying in appearance, both in its internal and external aspects, as it is efficient in the functional char-

New Laboratory

acter of its plan. GDC has combined its offices, laboratories, warehouse and shipping rooms and has equipped them with every modern facility for service. Every facility for cleanliness is maintained. It is an entirely modern building throughout, and holds the distinction of being the largest structure of its type to be erected in New York during the last 6 or 8 years.

Wilson Opens Greenville Office

J. R. Wilson, who recently resigned as superintendent of Columbia Manufacturing Company, Ramseur, N. C., after 15 years of continuous service, has opened the office of Wilson Textile Machinery Company, at 10 Webster St., Greenville, S. C. The new company handles new and used textile machinery and supplies, re-working of rings, spindles, bobbins, etc.

New Policy by U. S.

The U. S. Finishing Company has developed a new merchandising policy in regard to its finishes. The company believes in the importance of a complete follow-through on identification from finisher to consumer. There are three intermediate points of contact; the converter, the cutter, and the consumer, and the company believes that a finish may be identified at each point along the way. With this idea in mind, a new merchandising policy has just been inaugurated in relation to the Vitalized process. This process imparts a crease resistant quality to fabrics as well as the addition of strength and permanence to the finish.

International Nickel Expands Metallurgical Staff

The International Nickel Company, Inc., 67 Wall St., New York City, has announced several additions to its metallurgical staff. Charles H. Lindsley, a physical chemist, will specialize in the application of physico-chemical methods to the study of corrosion phenomena. For the past two years he has been connected with the Biochemical Research Foundation of the Franklin Institute. Donald J. Reese, a foundry engineer, will carry on research work on cast iron at the company's research laboratory. Frederick G. Sefing, formerly assistant professor of metallurgy at Michigan State College, will be employed on research work in cast iron at the Bayonne laboratory. Richard F. Barnes, Jr., will be available to the industry at large for technical service on problems involved in the utilization of mill products. Carl Rolle will be consultant to the industry in mill product fabrication problems.

Personnel Changes in Continental Diamond Fibre Company

Continental-Diamond Fibre Company, Newark, Del., has announced several important changes in the personnel of the manufacturing divisions of the company. L. W. Tarr, general manager, has resigned and J. P.

Mr. Wright

Wright, president of the company, will assume the responsibilities of this position, having three assistants who will head up three divisions of the manufacturing end of the business. J. Frank Anderson, vice-president of the Haveg Corporation, becomes assistant to the president and will be responsible for factory operation and maintenance. Robert Stewart becomes production manager; he was formerly assistant to the general manager. G. E. Landt will be technical director.

THIS SPEEDY, DEPENDABLE SERVICE
means ... Adequate Financing ...
No Credit Losses ... Greater Profits
A service that strengthens your financial position and makes definite savings possible! Commercial factoring does just that for you. For besides providing cash for shipments, Commercial Factors Corporation in checking your credits assumes all credit losses. We realize the importance of speed and are ready to render constructive salesbuilding service.
We invite your investigation.
COMMERCIAL FACTORS CORPORATION
Fred'k Vietor & Achelis, Inc.
Established 1828
Schefer, Schramm & Vogel
Established 1838
Peierls, Buhler & Co., Inc.
Established 1893
TWO PARK AVENUE, NEW YORK
CFC

American MonoRail Opens Charlotte Office

The American MonoRail Company, Cleveland, O., has announced the opening of its office in Charlotte, N. C., under H. W. Howarth, who was connected recently with the Lanett Mill of the West Point Manufacturing Company,

Mr. Howarth

Mr. Easley

and who was formerly chief field engineer for Robert & Company, Inc., Atlanta, Ga. The Greenville, S. C., office of the company is being moved to LaGrange, Ga., remaining under the management of Curran S. Easley, who was formerly connected with J. E. Sirrine & Company, Greenville, S. C.

Main and Claypool with Aurora Pump Co.

Frank S. Main and Lionel W. Claypool, formerly of Micro-Westco, have resigned their positions with that company to become president and vice-president respectively of the Aurora Pump Company, Aurora, Ill. They will have charge of a broad, new program being launched by the company, a part of which will include the marketing of a complete line of turbine-type pumps and water systems.

Ragan and Wilson Represent Watson-Williams in South

D. C. Ragan and E. V. Wilson have joined the staff of Watson-Williams Manufacturing Company, Millbury, Mass., makers of shuttles, heddle frames, heddles, hand stripper cards, and other mill supplies. Mr. Ragan, whose address is Box 1126, 205 Hillcrest Drive, High Point, N. C., will cover the northern part of South Carolina, North Carolina, Virginia and Tennessee. Mr. Wilson, who is located at 107 Elm St., Greenville, S. C., will travel the southern part of South Carolina, Georgia, Alabama, and Mississippi.

Awards Offered by Lincoln Arc Welding Foundation

The James F. Lincoln Arc Welding Foundation is offering awards totaling $200,000 to be distributed among winners of 446 separate prizes for papers dealing with a study of arc welding as a primary process of manufacture, fabrication or construction in 11 major divisions of the industry. The textile field will receive its share. To participate in this contest, it is necessary that submitted papers describe either the re-design of an existing machine, structure, building, etc., so that arc welding may be applied to its manufacture; or that the participant present a design (either in whole or in part) of a machine, structure, building, etc., not previously made—the description to show how a useful result, which was impractical with other methods of construction or which could better be done by arc welding, is obtained. Prospective entrants should communicate promptly with Foundation secretary A. F. Davis, P. O. Box 5728, Cleveland, O., for complete details of the rules and conditions covering awards.

Filley District Manager for Goodyear

E. A. Filley has been appointed southern district manager of the mechanical goods department of The Goodyear Tire & Rubber Company,

Mr. Filley

Inc., Akron, O., and will have his offices and headquarters in Atlanta. He will supervise mechanical goods sales in the Atlanta, Birmingham, New Orleans, Jacksonville, Charlotte, and Richmond branches.

Autocall Establishes New Office

The Autocall Company, Shelby, O., makers of protective and paging services, has established a new office at 1314 Rhodes-Haverty Building, Atlanta, Ga. This company has over 10,000 paging systems in service in the country today. While it has manufactured fire alarm and night watch equipment for nearly 20 years, recently the Autocall Company absorbed the Howe Electric Signal Company of Chicago, manufacturers of the latest type fire alarm, night watch, sprinkler supervisory, and AC network supervisory systems. Under the new Atlanta district office will come the states of North and South Carolina, Florida, Georgia, Alabama, Eastern Tennessee, and Mississippi. W. E. Woodrow is the district manager.

Minneapolis-Honeywell to Acquire National Regulator Co.

An agreement for the acquisition of the complete line of pneumatic controls manufacturer by the National Regulator Company, Chicago, has been entered into between that company and Minneapolis-Honeywell Regulator Company. Minneapolis-Honeywell is one of the oldest and largest manufacturers of control equipment.

Crerar, Adams & Co. to Distribute for N. Y. Belting

New York Belting & Packing Company has announced the appointment of Crerar, Adams & Company, 3550-3558 South Morgan St., Chicago, as distributors of the complete line of New York Belting rubber goods in the Chicago territory. The New York Belting products are sold through distributors only.

Wendell District Sales Manager for Link-Belt

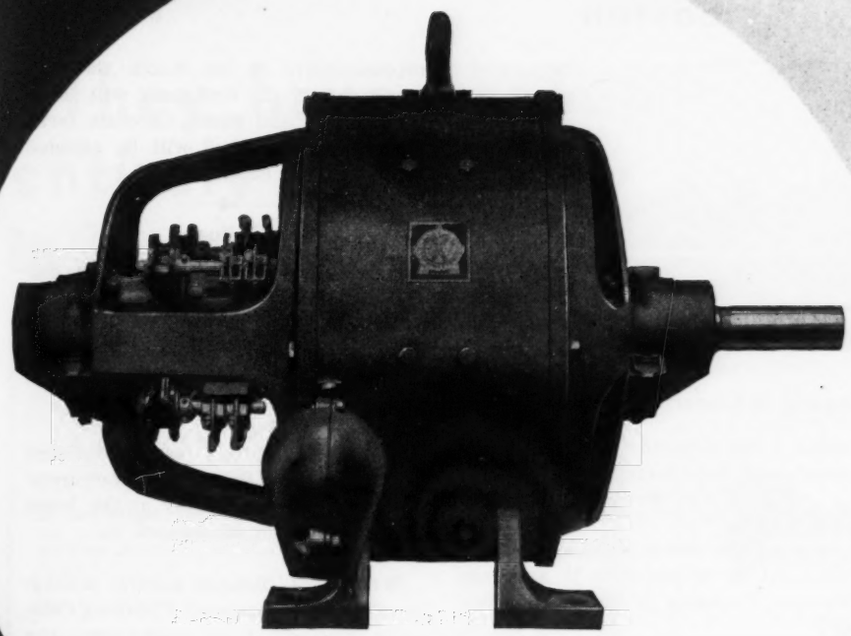
Erwin A. Wendell has been appointed district sales manager of the Link-Belt Company, 307 N. Michigan Ave., Chicago, Ill., and will have his headquarters at 317 N. 11th St., St. Louis, Mo. He has been connected with the company in Chicago since 1918, and for a number of years has served as sales engineer in metropolitan Chicago. In his new position he succeeds Howard L. Purdon, who has been transferred to the company's Chicago plant to assume sales responsibilities in that territory.

Hodges of Mutual Liability Insurance Passes

Charles E. Hodges, an outstanding figure in the field of liability insurance for half a century, and a staunch advocate of workmen's compensation insurance, died January 22 after an illness of several weeks.

Matthews Distributors for Boston Gear Co.

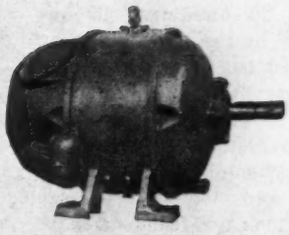
Matthews Morse Sales Company, Charlotte, N. C., has been appointed southern distributors for Boston (Mass.) Gear Company, makers of all kinds of gears. Also, Matthews has been appointed in the same capacity for Safety Grinding Wheel & Machine Company, Springfield, O., makers of emery wheels and other grinding products. I. R. Hill is now with the Matthews company and is covering the Carolinas.



Reliance Type T Heavy Duty Motor
for Direct Current
Four Poles · Sleeve Bearings

Ball-bearing motor with solid covers over top openings, screen covers over lower portion.

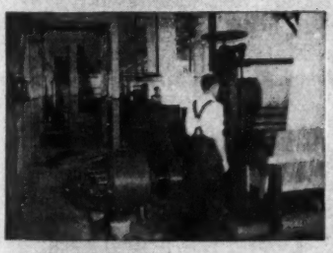
Reliance Vertical Type T Motor equipped with drip-proof covers.



Enclosed water-tight motor with ball-bearings. Hand-holes permit ready access to brush rigging and commutator.

Born and raised TO A HARD LIFE . .

It was in 1915 that the Reliance Type T Heavy-duty Motor emerged from the composite experience of some 35 industrial engineers — husky and well born. The past two decades have seen it grow steadily more and more rugged, its development still attended by practical experts. Reliance Type T Motors are widely known for their significant endurance, for their steady operation and minimum upkeep, under the necessarily severe conditions of a hard life . . . Critical buyers have approved the Reliance Type T Motor by a repeat-purchase record we are proud to show . . . The principal details will be found in Bulletin 120.



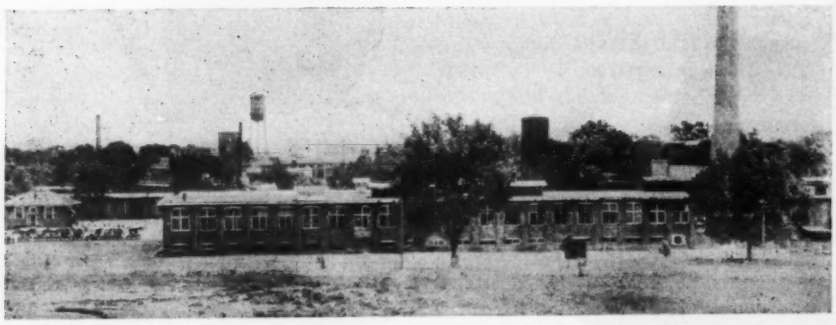
Reliance Range Drives allow a straight-run layout which keeps cloth moving faster with more uniform results.

The 3-unit Reliance Range Drive on this Van Vlaanderen Print Washer maintains automatically the right tension on the cloth in all sections.

RELIANCE ELECTRIC & ENGINEERING COMPANY
1088 Ivanhoe Road — Cleveland, Ohio

Branches: Birmingham, Boston, Buffalo, Chicago, Cincinnati, Detroit, New York, Philadelphia, Pittsburgh. Representatives in principal cities

RELIANCE A·C D·C MOTORS



Plant of National Oil Products Company at Cedartown, Georgia

New Plant Purchased by National Oil Co.

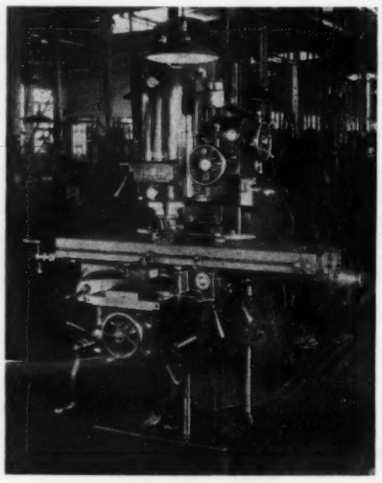
National Oil Products Company, Harrison, N. J., has purchased a new plant at Cedartown, Ga., for the manufacture of products used in textile processing, paper milling, and other industries. The property consists of 52 acres and 10 buildings; it was owned formerly by the U. S. Finishing Company, which has centralized operations in Hartsville, S. C. Another building will be erected soon. This plant will manufacture completely, all type products of sulphonation, condensation, high and low temperature chemical reactions and compounds of complex chemical synthesis. Research and control laboratories will be staffed by local chemists who will operate in conjunction with the main laboratories in Harrison. Modern equipment will be installed in the new laboratories which will be at the disposal of industries desiring research work on their products.

Engineer Finds Electric Instruments Valuable Aid in Plant Survey

R. C. Hodges, electrical engineer, Titanium Pigment Company, Sayreville, N. J., found, according to a recent report from the General Electric Company, Schenectady, N. Y., that electrical instruments proved to be a valuable aid in plant surveys. Many motors, he found, were overloaded. For example, the same horsepower-size motor that previously was satisfactory on a low-speed pump had been put on a higher speed pump of the same size. Other motors were found to be underloaded with resultant poor efficiency and low power-factor. Mr. Hodges considers the data obtained in this survey valuable because the findings help in keeping the plant running on its 7-day-a-week, 24-hour-a-day schedule by having the right motor for every job. About 90 per cent of the tests were made without breaking circuits; yet only simple testing equipment was used—two ammeters, a volt-meter, a volt-ammeter, a recording ammeter, and two current transformers.

H & B News

Among the newer members of the organization of the H & B American Machine Company is Irving R. Rowe,



Vertical Milling Machine

formerly associated as chief engineer with the Atwood Machine Company. Otto A. Belger, formerly of the Belger Company, Watertown, Mass., has been added to the staff in connection with sales, service, and research. Harold E. Fuller has been added to take charge of personnel work. The sales department is augmented by C. M. Powell, located in the Charlotte office, and George W. Murphy in the Atlanta office. S. St. John Morgan is now on the board of directors. The company has developed a new rubber covering machine and it is said to be highly satisfactory. Several new machines have been added to the shop equipment and all production departments of the company have been modernized.

Cheatham, Crenshaw, and Brown Represent Aberfoyle Company

Aberfoyle Manufacturing Company, 123 S. Broad St., Philadelphia, Pa., recently announced the appointment of W. T. Cheatham, Burlington, N. C., as representative in its North Carolina territory. W. H. Crenshaw will cover their North and South Carolina territory. Mr. Cheatham will be assisted by Walter C. Brown.

Obituary

ALEXANDER MAKEPEACE, retired cotton manufacturer, passed away recently. He had been superintendent of The Richard Borden Mills and of the American Printing Company, Fall River, Mass.

W. C. HEATH, 70, a former president of the Southern Cotton Manufacturers' Association, passed away at the home of a neighbor in Monroe, N. C.

WILLIAM J. TONJES, general manager of the Narrangansett Finishing Company, Westerly, R. I., passed away the middle of January after an illness of seven months.

T. J. CORCORAN, SR., prominent woolen and worsted manufacturer, passed away during January. He was 89 years old.

DANIEL B. COLTRANE, Concord, N. C., one of the organizers of Kerr Bleachery & Finishing Works at Concord, passed away the middle of January of a heart ailment.

J. M. JACKSON, secretary of the Roanoke Mills Company, Roanoke Rapids, N. C., died at his home during January after an illness of about three weeks.

JOSEPH W. BARBER, secretary of the Seyer Silk Dyeing and Finishing Company, Paterson, N. J., succumbed to an illness of the heart during January.

LOUIS L. WISNER, former president of the Industrial Dyeing Corporation of America, Charlotte, N. C., passed away the middle of January. He was 44 years old.

THEODORE S. DUTCHER, vice-president of the Chalmers Knitting Company, Amsterdam, N. Y., died unexpectedly at his home during January.

MAX IMHOFF, president of the Imhoff-Paillard Dyeing Company, succumbed to a heart attack the latter part of January.

E. C. PETERS, president of the Exposition Cotton Mills, Atlanta, Ga., passed away the early part of February after an extended illness. Mr. Peters was one of the organizers of the Cotton States Exposition.

"They have proven entirely satisfactory, in fact indespensible"

MARTHA MILLS
TEXTILE DIVISION OF THE B. F GOODRICH COMPANY
SILVERTOWN GEORGIA
POST OFFICE THOMASTON, GEORGIA

Mr. Max Wright, Gen. Mgr.
The Wright Company, Inc.
101 Cone Street, N. W.
Atlanta, Georgia

Dear Mr. Wright:

I'm sure it will interest you to know that we have used only Wright drink and food carts for several years. They have proven entirely satisfactory, in fact indespensible.

We have definitely established the fact that refreshments for employees during work hours are essential, enabling them to work full eight hours at highest efficiency.

Any objection to having carts in the mill is more than offset by the advantages gained in furnishing renewed energy to employees when it is most needed, saving their time going to the concession stand and having to hurry while taking refreshments.

Under the supervision of Mr. T. B. Echols we determined the most satisfactory method of filling this need is the central service stand with carts to carry refreshments to the employees at their work.

These carts serve a very definite need in our mill and I'm sure they will prove most advantageous in many textile plants. In fact it's just one of those things which help round out an efficient and agreeable operation.

Very truly yours,

ALBERT T. MATTHEWS,
General Manager.

A Partial List of Prominent Users:

Abbeville Cotton Mills
Aragon-Baldwin Cotton Mills
Avondale Mills
Bemis Bros. Bag Co.
Brandon Corp.
Callaway Mills
Clinton Cotton Mills
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Judson Mills
John P. King Mfg. Co.
Lydia Mills
Martha Mills
Pacolet Mfg. Co.
Pepperell Mills
Sibley Mfg. Co.
Stark Mills
Winnsboro Mills

THE WRIGHT Cold Drink and Food Cart can help you, too, just as it is helping the Martha and scores of other mills. It is a scientifically designed, electrically heated cafeteria on wheels, with compartments for hot and cold foods, iced drinks, candy, gums, tobaccos, etc. Roller bearings contribute to ease of operation and they are made in sizes to accommodate any mill conditions.

We also have a specialized industrial feeding service for employees, including the supervision of cafeterias, lunch rooms, stationary and portable canteens. We invite the opportunity of consulting with you on the most advantageous service for your particular conditions. Just drop us a line for full details.

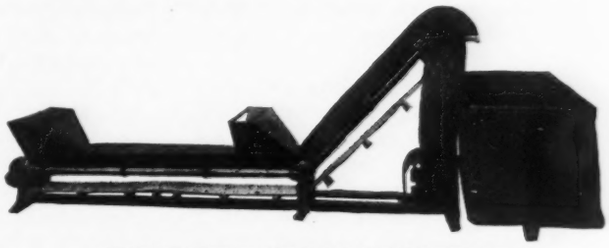
WRIGHT CO., 101 Cone St., N.W.
ATLANTA, GEORGIA

WRIGHT

Wright GOODS-PRICES-SERVICE ATLANTA, GA.

COLD DRINK AND FOOD CART

Another Time Saver



THE NEW BOBBIN CONVEYOR

This new Conveyor (Assembly K-650-X), when used alone, will soon save its cost in handling time. It carries cleaned bobbins away from Utsman or Type K bobbin stripping machines and can be extended to care for one, two, three, or four machines. The bobbins are deposited in a full-sized filling box. When combined with the Bobbin Box Hoist, handling is completely eliminated except for the actual feeding of the machines. The savings of one assistant will more than pay for both units within approximately eighteen months.

The Conveyor can be supplied in either belt or motor drive. Where it serves one Type K or Utsman machine, the drive may be taken directly from the bobbin stripper.

Where two or more machines are served by one Conveyor, the drive must be independent, with a separate motor. A ½ H. P. motor is supplied for either single or 3 phase current, controlled by a heavy snap switch.

We shall be glad to estimate what this time saver, as well as the Hoist, or the two combined, will mean to your mill in dollars and cents. There will be no obligation, of course.

Textile World YEAR BOOK and CATALOG

the new TYPE K *Bobbin Stripper*

The Terrell Machine Co., Inc.

1200 North Church Street
CHARLOTTE, NORTH CAROLINA

MR. LUTHER PILLING, Danielson, Connecticut, *Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., *Manchester, England, European Agents*

PERSONAL NOTES
about Men You Know

ALBERT S. FORD, formerly with the Belmont (N. C.) Hosiery Mills, has accepted the position of manager of the Spotlight Hosiery Mills, Inc., Rome, Ga.

JESSE M. JONES, formerly with W. A. Handley Manufacturing Company, Roanoke, Ala., and a graduate of the Alabama Polytechnic Institute, Auburn, Ala., has accepted the position of assistant superintendent of the John P. King Manufacturing Company, Augusta, Ga.

J. R. FISH, formerly associated with the Bearnite Mills, Cohoes, N. Y., has been made superintendent of the Suncook (N. H.) Mill.

J. R. DOVER, JR., has been elected president of the newly-chartered Esther Mills Company, Shelby, N. C., which recently took over the old Eton Mills plant.

WILLIAM R. HUTZ, former director of the United Piece Dye Works, Lodi, N. J., has joined the Sunbury (Pa.) Converting Works, in an executive capacity.

PAUL CARTER, Philadelphia, Tenn., has been made secretary-treasurer and manager of the Lorraine Hosiery Mills, Inc., Sweetwater, Tenn.

CARL H. GEISTER, recently with the Mellon Institute of Industrial Research, Pittsburgh, Pa., has joined the technical laboratory staff of the Dyestuff Division of the E. I. Du Pont de Nemours & Company, Wilmington, Del.

EDMOND C. THOUNT, JR., has been made overseer of dyeing at the Lobsitz Mill, Nutley, N. J.

M. D. COLLINS, formerly overseer of weaving, Eagle & Phenix Mills, Columbus, Ga., has accepted a position as assistant superintendent at the Durham (N. C.) Cotton Mill. He is succeeded at Eagle & Phenix by BRUMLEY D. PRITCHETT, who has been with the Georgia-Kincaid Mills, Plant No. 1, Griffin, Ga.

C. B. GUNN has been made superintendent of Strain Manufacturing Company, Rome, Ga.

ROBERT PINAULT, formerly with The Celanese Corporation, Cumberland, Md., and the United States Finishing Company, Sterling, Md., has joined the technical staff of the Warwick Chemical Company, West Warwick, R. I.

T. B. ECHOLS, formerly purchasing agent at the Martha Mills, Thomaston, Ga., is now secretary-treasurer of Industrial Stores, Inc., Atlanta, Ga., and is specializing in food and drink carts for textile mills.

J. D. PELL, formerly manager of the Angle Silk Mills, Rocky Mount, Va., has been elected president of that organization.

DAVID A. PURCELL, formerly superintendent of Aiken Mills, Bath, S. C., has resigned his position to become assistant superintendent of manufacturing for the Eagle & Phenix Mills, Columbus, Ga.

J. D. CASSADA, graduate of N. C. State textile school, has been promoted from superintendent to assistant manager of the Roanoke Mills, Plant No. 2, Roanoke Rapids, N. C.

A. B. QUINN, who has been connected with one of the Dover Mills, Shelby, N. C., has been elected assistant treasurer of the Cleveland Cloth Mills of the same place.

J. E. DUNCAN, formerly with the Santee Mills, Orangeburg, S. C., is now in the carding department of the Thomaston (Ga.) Cotton Mills.

H. R. LOCKMAN, formerly of the Wade Manufacturing Company, Wadesboro, N. C., has been made assistant overseer of spinning at the Beaumont Mills, Spartanburg, S. C.

WENDELL P. PERKINS has been made superintendent of the Queen City Cotton Company, Burlington, Vt.

H. MORRISON, who was formerly with the Barre Wool Combing Company, South Barre, Mass., is now connected with the Ciba Company, Inc., New York City.

G. A. THORELL, JR., has been given charge of the finishing at the Pontiac Finishing Plant, Pawtucket, R. I.

WILLIAM G. DUNNING has been made overseer of dyeing at the S. Blumenthal & Company mill, Shelton, Conn.

L. A. FUNDERBURK, formerly of Uniontown, Ala., and Lincolnton, N. C., has become general superintendent of the J. & J. Spinning Mills, Maiden, N. C.

C. S. SMART, formerly superintendent of the Locke Cotton Mills, Concord, N. C., has become one of the owners and manager of the Kinston (N. C.) Cotton Mills.

J. B. WALKER, Aurora, Ill., has been made overseer of finishing at the Hillside Plant, Callaway Mills, LaGrange, Ga.

HUGH PATRICK has been promoted to general superintendent of the Union Bleachery, Greenville, S. C.

G. O. LIPE, for many years superintendent of the Linn Mill Company, Landis, N. C., was elected president of the company, succeeding the late D. B. COLTRANE.

R. BIGHAM SMITH has joined the sales force of The Terrell Machine Company, Charlotte, N. C., and will have charge of sales in Georgia, Alabama, Louisiana, Mississippi, and Tennessee.

V. C. SHADDEN has joined the sales staff of E. F. Houghton & Company and will cover the Tennessee territory. His headquarters will be Chattanooga.

J. C. BAUCOM has been made superintendent of the Roberta Mills, Concord, N. C.

D. A. STANCILL, who formerly was overseer of weaving, Judson Mills, Greenville, S. C., has accepted a position as superintendent of the Burlington Mill, Mooresville, N. C.

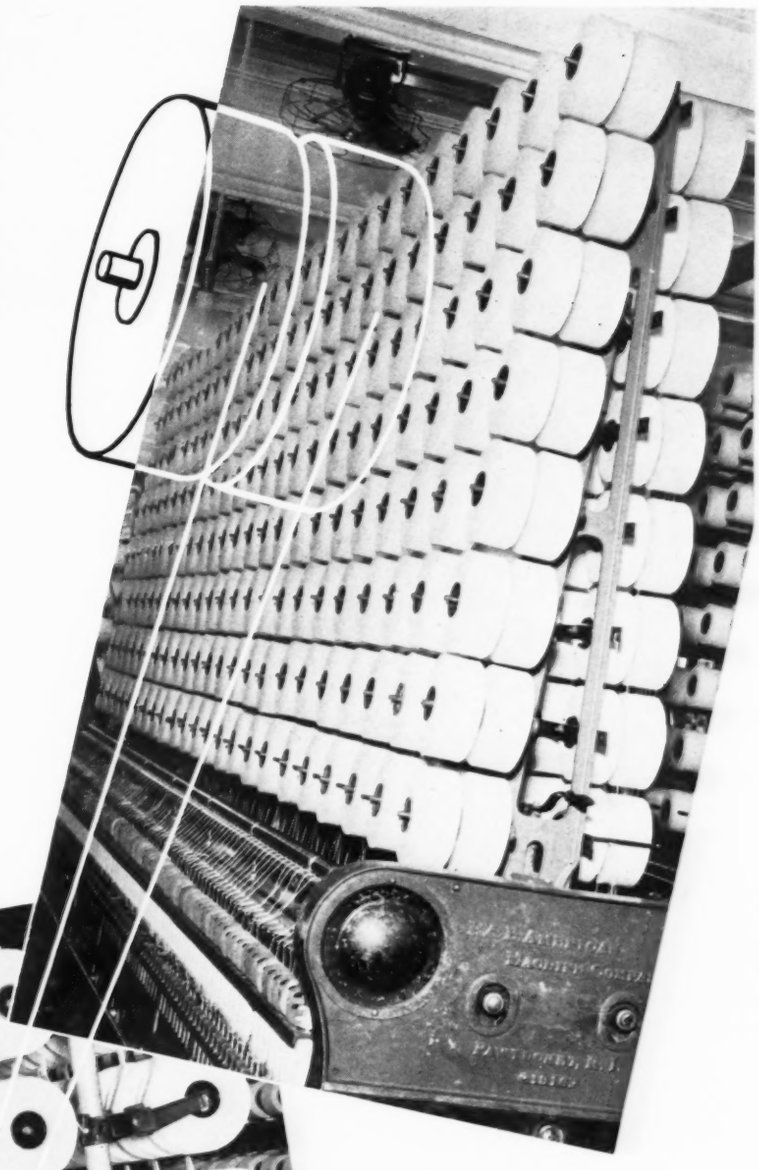
JOHN H. MOORE, who has been superintendent of the Laurens (S. C.) Cotton Mills for more than 20 years, has resigned. His successor will be announced later.

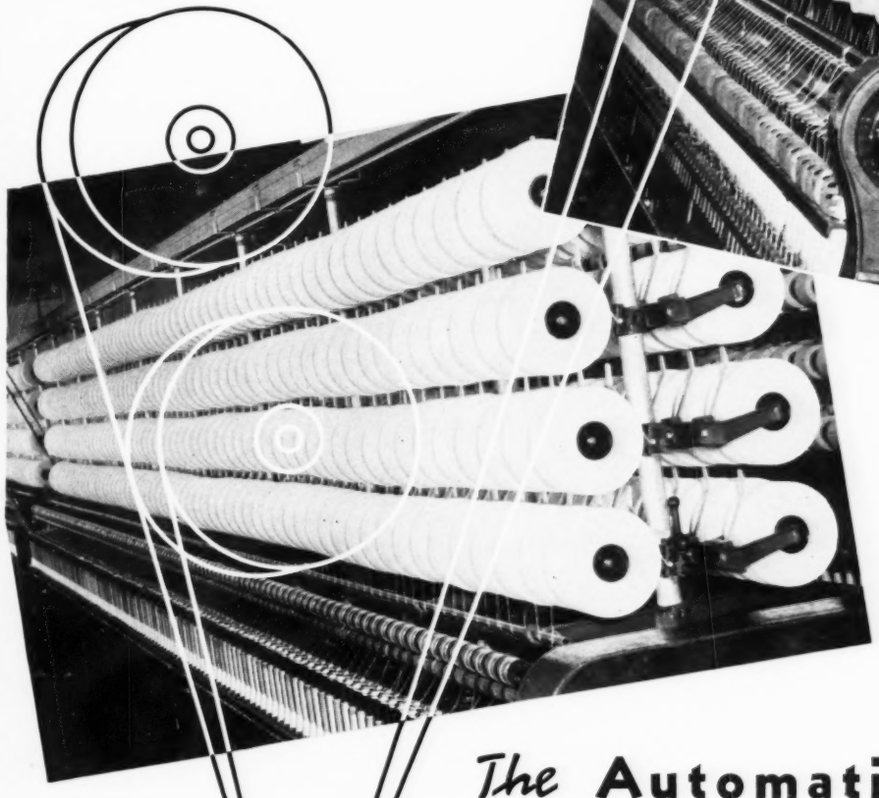
JOSEPH FRIEDMAN, formerly with the Corinthian Mill and the States Hosiery Manufacturing Company, has become associated with the Friedman Hosiery Corporation, of which his brother, JACK FRIEDMAN, is president.

O. E. BISHOP, who formerly was overseer of weaving at the Gayle plant, Springs Cotton Mills, Chester, S. C., has accepted a position as overseer of weaving at the Inman (S. C.) Mills.

TWIST *from* CHEESES *wound on the Automatic Spooler*

Minimum costs in both spooling and twisting departments can be obtained by twisting from cheeses wound on Automatic Spoolers.





● ABOVE, Twisting coarse yarn from cheeses, using skewers rotating on plain spindles.

● LEFT, Twisting fine yarn from cheeses, using ball bearing skewers.

● The Twister Creels shown here were designed by Barber-Colman Company for application to standard twisting frames.

The **Automatic Spooler**
IS EXCLUSIVELY A PART OF THE

BARBER-COLMAN SYSTEM of SPOOLING and WARPING

Understanding service.....

Every SONOCO sale is a *personal* transaction—from the time your order reaches our factory until the final delivery is made.

Such Understanding Service is the result of a genuine desire to serve. Each order as it passes through our factory is considered in the light of a personal responsibility by everyone it touches.

A background of years of knowledge, years of Understanding Service, makes every SONOCO sale a personal transaction of more than transient meaning.

•

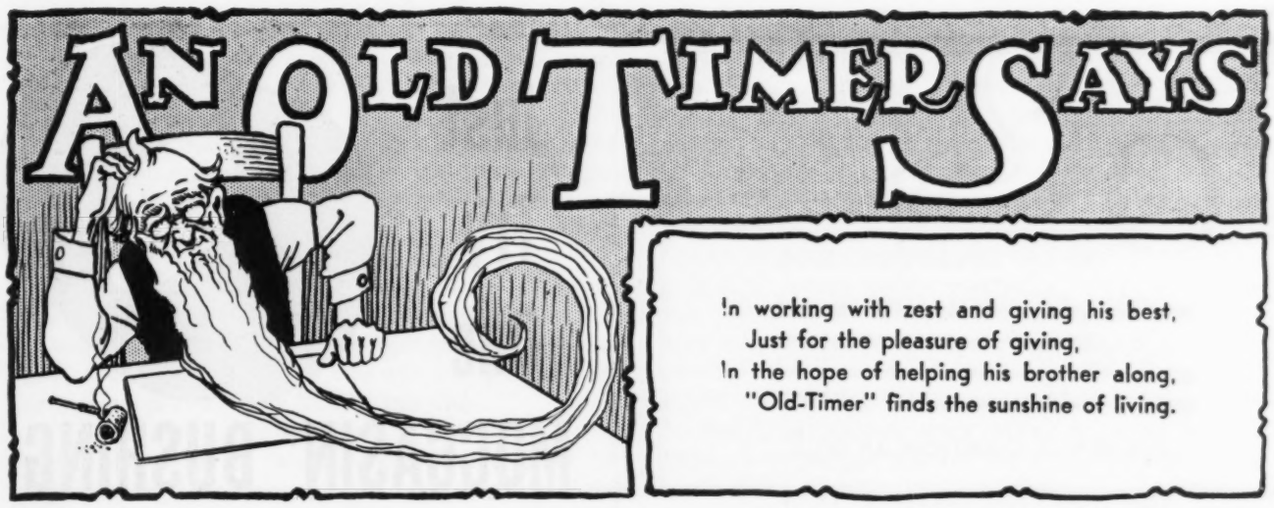
Southern Textile Exposition
Greenville, S. C., April 5-10 Booth 103

Knitting Arts Exhibit
Philadelphia, Pa., April 19-23 Booth 158

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Labor

WHAT are you fellows doing to combat all the propaganda, newspaper articles, etc., concerning the big strikes and so on that your operatives are reading?

You know it is a psychological fact that if you continually and persistently present just one side of any kind of a thought, good or bad, to the human mind, some of that propaganda is going to "stick".

That is why OLD-TIMER has asked the question—What are you doing to combat all of this "stuff" that is being fed into the minds of your operatives?

You of course know that in a number of mills operatives view with suspicion anything said by officials or managers or superintendents in regard to their welfare.

It would, therefore, look like almost a hopeless case to try to do anything. But, on the other hand, we all know that to simply fold our arms and do nothing is not only foolish, but against the sound reasoning of any kind of business judgment.

Human nature is one of the most complicated studies we have ever been confronted with, yet the most simple.

That, of course, sounds like a contradictory statement, but it certainly is not. You know that most inventions look very simple *after* the other fellow has brought out the idea; you say "Sure, that's simple; I could have done the same thing myself." But you didn't.

When you have labor trouble at your plant and then hear of a large mill that did not even have to barricade its grounds against the flying squadrons that shut so many mills down only a few years ago do you pass it up by saying, "Oh that mill was lucky; or, they have a good set of help," etc., etc.? Do you realize that there is a *cause* behind that mill being lucky or having a good set of help?

If you will take the trouble to really find out, you will usually discover that that firm is doing something to get its message to the operatives; they are doing something that you are not doing. That firm is doing some of those seemingly simple things which you may say—"Heck, I don't see where that does any good! I don't see anything to that."

However, if you will only go deeper into the matter you will find the firm in question is giving a great deal of thought to those seemingly simple things; you will find that the executives are sitting in conference with the practical men, talking, discussing, reasoning and planning on the effect, the reaction and the final results of every paragraph, every sentence—yes, every word of the message they are carrying to their operatives; you will find the highest priced executives and practical brains they can secure, giving unlimited time to this seemingly simple, and as some men think, unimportant, phase of the manufacturing business.

You know you can take a drink of water at exactly ten o'clock every morning for three months and then you can tell when ten o'clock comes without having to look at your watch.

Which arm do you put into your coat sleeve first? Try putting the other one in first and see how awkward it feels.

Do you realize that you practically always go around the same side of your chair when you sit down at the dinner table?

And, you sneeze just the same way you have sneezed for the past 10 years.

Look out now, here comes a question that may hit you right between the eyes, and I only hope it does, if it will cause you to realize the great importance of the one biggest problem confronting mill men today, viz., the labor problem.

You know that you are doing some of the simple things mentioned here in just exactly the same way you were doing them 10 years ago, don't you?

Well, the important question is: Are you THINKING along the same lines concerning your firm's attitude toward labor that you were 10 years ago?

If you are, all I can say is, your time is coming just as sure as death and taxes. If you are still taking that passive attitude, probably something like this: We are paying good wages, in fact, better than the average mill; our work is running well; we are giving them insurance; we are doing a lot of welfare work; we have never had any serious labor trouble; we know that the majority of our old operatives are

OUR function as factors includes not only the financing of sales, but covers credits, collections and other phases of business as well.

Because we realize that our success depends on that of our clients, we constantly endeavor to make our service to them more effective. If yours is a financial problem within our scope we would welcome an inquiry.

MILL FACTORS CORPORATION

354 Fourth Avenue, New York City

Just Try One

MOCCASIN BUSHING

on your most troublesome bearing

We have made broad claims for Moccasin Bushings and have yet to report the first failure. We can always safely guarantee them to give the fullest satisfaction on the most troublesome bearings.

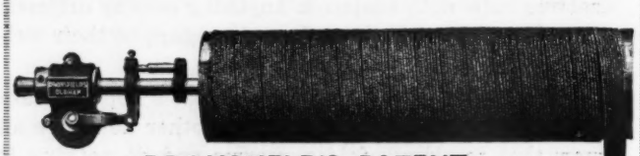
Moccasin Bushings have become standard equipment in many textile machines. Specially treated inserts insure every drop of oil reaching the bearing surface and prevent the need of oiling but once or twice a year.

Write us today for full data on these famous bushings.

MOCCASIN BUSHING COMPANY

Chattanooga, Tenn.

Makers of Brass and Bronze Castings of Every Description



DRONSFIELD'S PATENT

"ATLAS BRAND"

EMERY FILLETING

"The New Flexible" "Needs No Damping"

Stocks in all the leading Mill Centres

TRADE MARK ATLAS

The Standard Card-Grinding Medium

GUARANTEED "A" QUALITY
THE ONLY QUALITY WE MAKE

Used the wide world over, like The DRONSFIELD CARD-GRINDERS

Stocked by the *Principal Mill Supply Houses*

Sole Agents for Dronsfield's Machinery for U. S. A.:—
John Hetherington & Sons, Inc.
250 Devonshire St.
Boston, Mass.

loyal to us. (Do you?)

The majority, yes a great majority of General Motors' operatives are loyal too, that is, they want to work, but look what a heck of a fix they are in.

One of the sad facts concerning the attitude of operatives who are loyal is, that they are passive in that loyalty; they haven't the initiative, the determination or leadership to stand up and make a united fight for their rights as free American citizens.

I can tell you of one large mill where one of the outside organizers, not just a local organizer, but one of the big fellows from headquarters, came to that town and stayed for nearly two weeks and did not get enough support to even have a meeting.

Do you think this was just a "happen-so?" Do you believe that the management of that plant has just been drifting along for the past 10 years, doing nothing but push for production and cost, and not doing anything to build up among its large force of operatives a feeling of confidence among them; not letting them know that they were a part of the firm nor that the company realizes that, "neither labor nor capital can permanently prosper unless the just rights of both are conserved"?

The mere stating of this fact, and others, to the operatives will not get results, save in a very few instances. It has to be presented in such a tactful way and in such a reasonable way that natural prejudices, such as some operatives have, will be broken down.

Do you believe that your operatives have any real and practical conception of what capital is? You of course know that the very word capital usually raises the ire of most operatives. Have you ever tried to find the reason why?

Do you realize that there is a way, yes, a practical way, to get them to know what capital is, and to realize that they are partners of capital and that one partner cannot prosper without the other?

These are big questions, fellows; they are the most vital problems facing every overseer and superintendent in the business today, and then for OLD-TIMER to make the statement that such problems are simple, of course sounds contradictory. I don't blame you for being a "doubting Thomas", but if you will only take the time to look up your file of OLD-TIMER articles over a period of the last 10 to 15 years and study them, you will discover that in all these years he has been making every effort he could possibly think of to prepare you for the very situation that is confronting us today.

Such articles as: "Are You Master of Yourself?"; "A Simple Secret"; "Is Your Word of Honor as Good as Your Bond?"; "You Must Make a Man Make Money for Himself"; "Be an Artist on Your Job"; "Human Nature", and others too numerous to mention.

Do you feel that the problems I have mentioned are those for which there are no practical solutions, no practical way to solve them? If so, then you had just as well say that it would be impossible for a man who has been putting his right arm into his coat first for the past 10 years, to change and put the left arm in first.

OLD TIMER.

Editor's Note: If you want OLD TIMER *to go further into this question for you, write him a personal letter. He has some ideas.*

Dall Re-Elected President National Rayon Weavers' Association

At a meeting of the National Rayon Weavers' Association, held February 9 at the Harvard Club, New York City, C. Whitney Dall was re-elected president of the Association. The members of the association heard a detailed report by Mr. Dall concerning various matters of interest to the trade, but no action was taken on any of the points discussed. The meeting approved the acts of the board of directors and transacted other routine business. Nathaniel F. Ayer of Cabot Manufacturing Company, was elected chairman of the board of the association. The only change in the executive committee of the organization was the election of Edward F. Addiss of Burlington Mills, in the place of J. Spencer Love of the same organization.

Two Technical Symposiums at A.S.T.M. Meeting

At the regional meeting of the A. S. T. M. held at the Palmer House, Chicago, March 2 and 3, two technical symposiums, one on lubricants and the other on corrosion testing were the features. The symposium on lubricants was sponsored by Committee D-2. A paper was delivered on "Engine Deposits—Causes and Effects" by Dr. W. A. Gruse, senior fellow, Mellon Institute of Industrial Research. Another paper was read by A. J. Underwood, assistant head of the power plant department, General Motors Corp., on "Automotive Bearings—Effect of Design and Composition on Lubrication." Several papers were delivered on the corrosion testing, and written discussion of the papers was invited.

Factoring Found Beneficial in Many Lines

In an essay recently released by Snelson Chesney, vice-president John P. Maguire & Company, Inc., New York City, it is pointed out that factoring may be found beneficial in many lines, other than textiles. Dating back nearly one hundred years, some of the so-called "factoring" organizations have rendered valuable service to manufacturers, particularly in textile lines, that in recent years have been extended into other lines of industry. There is no good reason why, states the release, any established manufacturer distributing his manufactured product through department stores, retailers, jobbers, chain stores, or mail order houses could not adopt factoring as a means of financing the movement of his product and thereby reduce the permanent or fixed capital required at least to the extent of the capital or credit used to carry his customers for the period of terms granted on goods purchased from him.

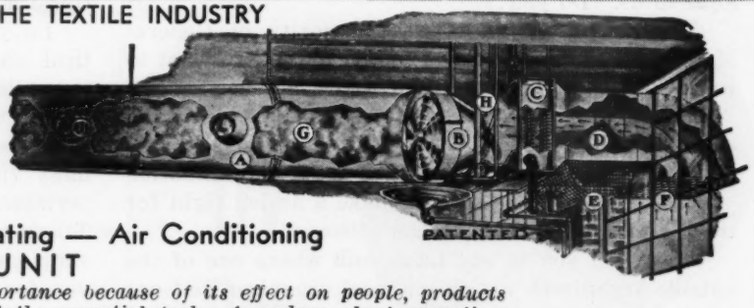
Patents Granted for Picker and Shuttle Check Mechanism

Charles L. Kennedy, Columbia, S. C., has been awarded a patent on a loom having a spring for driving the picker and a trigger for releasing the picker and a shuttle check mechanism, according to Paul B. Eaton, patent attorney, Charlotte, N. C. Andrew L. Taylor, Goldville, S. C., secured a patent on automatic means for replenishing the rovings in a spinning frame. When a skewer becomes empty it falls through a slot and trips a mechanism to bring in another skewer and feed its end to the back drafting rolls. Half interest in this patent is assigned to P. B. Mitchell, also of Goldville.

THE MOST MODERN EQUIPMENT FOR THE TEXTILE INDUSTRY

The

BAHNSON HUMIDUCT



For Humidifying — Heating — Ventilating — Air Conditioning

ALL IN ONE UNIT

Air Conditioning in industry is growing in importance because of its effect on people, products and profits. It must be considered as one of the essential tools of modern plant operation.

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This is the Age OF SPEED and HIGH DRAFT SPINNING

Ring Travelers of greater endurance are necessary. Wentworth Double Duty, Wentworth Gravity, Gravity Express and Lowboy meet these new requirements.

New Duplex Twister Travelers — C. E. F. Twister Travelers

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Southern Representatives: L. Everett Taylor, H. B. Askew, P. O. Box 272, Atlanta, Ga.—Otto V. Pratt, Union Mills, N. C.

TEXTILE APRON CO.

905 SOUTH MAIN STREET,

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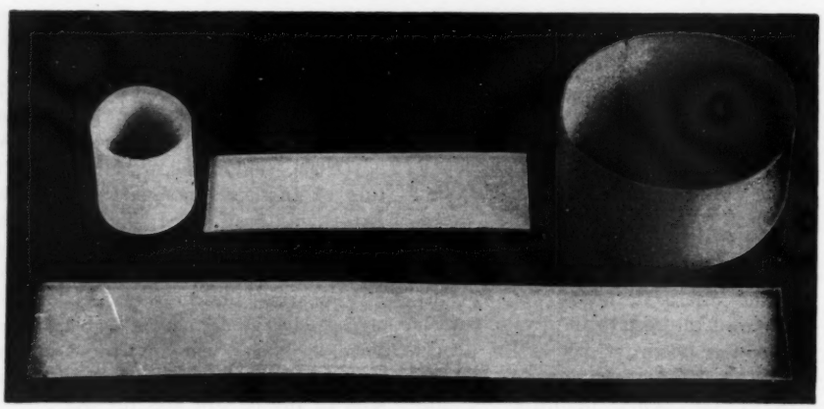

WE are equipped to furnish long draft aprons for all purposes. Workmanship and materials guaranteed. Send us samples of your aprons and we shall be pleased to quote you prices.

CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by

CLINTON COMPANY

CLINTON, IOWA

QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Whence Came We, and Whither Are We Going?

EDITOR COTTON:

Once I heard a great man say, "Happy is the child born into a family where there is a competition of ideas, and the recurring theme is truth." I say, happy is the subscriber to COTTON, that is, one of the family of contributors to the "HOW OTHER MEN MANAGE" department, where there is competition of ideas, for knowledge is power. I would like to have every reader of COTTON weigh the following question.

In the year 1935, are our latest cotton manufacturing methods leading us to the right or to the left?

The manufacture of cotton had its origin in the East, but the first real cotton card was invented by Sir Robert Peel with the assistance of James Hargreaves of England in the year 1762. However, it is not necessary for the writer to give the reader the history from that time to the present in order to convey our views in the degree of drift from the ideas of our forefathers, namely, doubling at every opportunity.

Instead, let us start from the year 1885. At that time, the modern mill equipment consisted of what was known as the opener, which in turn consisted of a conical beater, fan, and a lattice apron. The cotton was fed to a pipe about a foot in diameter, and by the suction of the fan, the stock was drawn in contact with the conical beater over the lattice apron to the floor.

The stock was taken from the floor and spread by hand on the breaker apron or intermediate picker where the first lap was formed.

Next, to the finisher picker three laps into one. From the finisher picker the lap was carried to the card, known at that time as the stationary flat card. There were 21 cards in a row to two railway heads. One card in every row was allowed for grinding. We had from 3 to 4 doublings on the drawing frames, with two processes.

As stated in some of my previous articles, the weight of the railway head sliver varied from 90 to 115 grains to the yard.

The finished drawing sliver from 70 to 90 grains to the yard.

The frictional contact was so great that all expert carders painted their top drawing rolls with what was known at the time as barn-door red. This varnish gave the rolls a very rough surface and helped to reduce the actual draft nearer to that of the figured draft. (Are you listening, OLD-TIMER?)

Following the drawing frames, we had the slubber, intermediate and fine frame. Such a mill was known as a print cloth mill and this was called the American system.

Next, the English system was introduced with the introduction of the revolving flat card. So, we started this new system, with a card sliver of 70 to 80 grains to the yard.

In most mills we had three processes of drawings with six ends up to each delivery. I would like to have the reader stop here and take notice that at one time the belief was that the doubling at every opportunity destroyed all defective places.

Next, fine goods mills started to appear, and the weight of the carding sliver was reduced and the drawing frames were reduced to two processes. There were also the sliver and the ribbon lap machine along with the comber.

Doubling at every opportunity again increased when the second intermediate was adopted, as also the jack frame. Double roving was adopted also for the mules and ring frames.

My point is that at that time, as now, many carders believed that doubling at every opportunity makes the strongest and most perfect yarn. However, from the foregoing you can see that from the year 1885, that the doublings increased from around 1100 to over 120,000 and more.

With the foregoing in mind, let us consider the new long draft roving system. Here we have the reverse idea in the year 1934 to that held by our forefathers from the beginning of the cotton industry. The new long draft roving system is here to stay—no question about that—but by ostracizing the method of doubling at every opportunity, are we going to the left or to the right?

It can be deduced from the foregoing that, first, we started with doubling at every opportunity and a heavy sliver, and second, we reduced the sliver from 115 to 50 grains to the yard.

Remember the Dunn flyer? This flyer was placed on the market to run with any old cone which was impossible. Then my good friend Fay H. Martin came to the rescue and designed the straight line

bottom cone and outside of creating more unequal conditions due to the increase in pressure, they were successful.

Are we doing the same with the long draft roving system?

No one can deny that to this day we find much variation in the weight of the finished drawing sliver, due to many reasons. The chief reasons, however, are excessive drafting, heavy sliver, and frictional contact between the top front roll and the bottom steel roll.

Is it not a fact that when the revolving flat cards were first introduced, that most all 50,000 spindle mills had 48 cards to 60 finished drawing deliveries?

I doubt that you could find such a hang-up at this writing in any up-to-date mills, and why? We discovered long ago that a heavy finished drawing sliver caused thin and thick places in the yarn.

You have heard men condemn the new long draft system without inquiring as to the character of the finished drawing sliver, which is the sparker for this article.

Are the makers of the long draft system making the same mistake as that made by the makers of the Dunn flyers?

If the long draft system is a success with a finished drawing sliver where the fibers vary in great numbers in the cross-section of the strand, how much better would be the result with a light and more even drawing sliver? That is the question, and a very important one.

Please be reminded also that the faster the fibers are run through a machine, the more the filaments hold the convolutions therein, and hence the stronger the yarn.

Most readers of this department may not have had the problem of being up against a board of directors. I have. That is what makes it tough for a superintendent when a new method of manufacturing is introduced.

I want it understood right here that I am in favor of the long draft system, excepting the draft rod system.

Suggested Discussions by You Readers

The following is what I would like to see discussed in this department:

1. We reduced the sliver from 115 to 50 grains on our cards.

2. Up to this date, we have fine goods mills running with over 120,000 doublings of laps against 1,100 doublings since 1885.

3. With the new long draft roving system, and also the long draft sliver system, can this system produce the same quality yarn as that produced with 120,000 doublings of laps?

4. Will the future carding hang-up consist of 120 cards instead of 60, with a lighter carding sliver, and, with a lighter carding sliver, will the number of ends at each delivery on drawing be doubled? Shall we have only one process of fly frames?

WASH (R. I.)

Wants Comparison of Shuttle Spring and Shuttle Consumption

EDITOR COTTON:

During the past 12 months we have been having a lot of shuttle spring breakage and we have had to buy approximately an average of a spring per loom for the year. We would like to know how many shuttle springs the different mills use per year per loom, or per 100 looms, or any way the readers of this department wish to express it. We think that our spring breakage is too high.

Also, during the past year we used 1282 shuttles on 1413 looms which gave us 4695 loom hours per shuttle. We would like to compare our shuttle consumption with others making the same goods that we are making.

Our looms run 165 picks per minute and we are making 68x72 and 64x60 cloth.

CONTRIBUTOR NO. 6625

Some Card Room Suggestions

EDITOR COTTON:

I would like to make a few suggestions that would positively mean a saving of money by a gain in production for any company. I think it would be a decided advantage to keep a card record of each piecework employee that would show his proficiency on the job; this is similar to the report card of a school child. The system would periodically show good and bad points of the operative. Quality and quantity marks recorded in a systematic way could be presented to employees at quarterly intervals for inspection and comment. This system would save the company money as it would have a psychological effect on the employees that would be beneficial to them. This would ultimately save each employee the expenses incurred from labor turnover.

Another suggestion would be for each section man to examine machinery on the following schedule:

(a) One picker each week.

(b) Inspection of each card after grinding.

(c) Lappers, combers and drawing, about two each week.

(d) Four fly frames each week; preferably while being doffed.

This would enable the overseer to ascertain in advance any repair parts or supplies that would be needed, and would accommodate the shop force by letting them know how many gears, etc., that would be needed. Planning the job ahead would increase production, decrease cost and insure a better running job.

I would also like to offer a suggestion on eliminating gouts in roving, which cause considerable trouble and expense. I find that the top of flyers on frames where the roving goes through the hole have collected dirty cotton or waste. In a careful check-up I find that 75 per cent of the flyers have this. When the steel rollers are cleaned, this trouble is likely to follow; these flyers could be cleaned by air and eliminate the waste. In some cases, the fleece on clean cloth becomes slick and does not collect the clearer

waste as it should. This may be helped by using a piece of card clothing to re-fleece the clearer cloth and will prolong the life of the clearer cloth if it is used properly. Sometimes I have noticed a frame tender running the bobbin up and down to remove the choke or cotton from between bobbins and spindles. One mill cleans bobbins with air when the bobbins are empty by placing a rack over the top of a drawing can or sack and blowing the dirty waste out. The bobbins have to have holes in them for this.

We find that most tangled roving is on a new and slick-top bobbin. This may be overcome, I think, by putting a heavy coat of enamel, one-half inch deep, at the top of the bobbin. This will increase the diameter of the bobbin and will stop a good bit of roving from slipping off at the top.

It is also well for second hands to ask themselves if they are the type second hands they would put on a job. It is a good idea for a man to take a self-inventory occasionally. A man should try to run his job better today than yesterday—with the keen competition in textile mills we don't want to go backward.

CONTRIBUTOR NO. 6521

Ideas on Card Settings

EDITOR COTTON:

I have heard a good bit of discussion on how to set cards and have read how other men set their cards; now I wish to give my ideas on this subject. First, I want to say that I took a job once where the cards were set just any way; the flats had different setings at all points, the screens were off, the feed plates were set to a 7/1000 gauge, the front and back plates were set to 29/1000, the doffers were jammed, some of the cylinders and doffers were faced and I don't know what else was not right. There was no excuse for bad settings because the cards were on the ground floor and it was constructed of cement. A good grade of cotton was being run, 7/8-inch to full 1-inch Strict Middling. The yarn being made for weaving was from 3s to 26s and the cloth woven from this yarn was a sight to behold; it had thick and thin places, was trashy and had neps in it.

Condition Should Not Have Occurred

If the overseer had known his business he would never have allowed this condition to occur in his room. I am not an expert in every respect, but I think that a man who has charge of a card room should know how to set cards and see that they are set that way so that the product will be clean and will produce first class material.

The first thing I did when I found these settings was to meet the card grinder and say, "Mister, let's go over this card right here, checking the settings as we go, but not moving anything until we finish, then we'll set the whole card over." Well, we did. In fact, we tore the card down just as if we were going to move it. Someone may say there was no use in this. I did it because I wanted to know how the cards were being set-up and gauged.

Then we began the settings and I shall list them in the order we started:

Screen at the doffer nose, 1/8 inch.
Middle and back part of screen, 29/1000.
Screen lip to face of cylinder, loose 10/1000.
Licker-in screen to licker-in, 12/1000.
Licker-in to cylinder, 7/1000.
Feed plate, loose 10/1000 or tight 12/1000.
Back plate bottom, 22/1000; top, 17/1000.
Front plate bottom 17/1000; top, 22/1000.
Flats, smooth 10/1000.
Doffer, smooth 7/1000.
Doffer comb, smooth 22/1000.
Flat comb, 7/1000 (not to rub flats).

After setting this card and starting it, I found that I had a clean, smooth web and a good average weight flat strip of about 16 grains per flat. After running this card for some time, I had all of them set as nearly like it as possible.

All cards cannot be set just exactly alike because of the condition of the card and the foundation of the floor. These settings apply to the Saco-Pettee, Saco-Lowell, and Whitin cards. To get clean work the cards must be kept in good condition and to achieve this end, we must have a good card grinder. He should always be watching for things on his job that will cause bad work such as bad screens, slack flat chains, bad licker-in, dull doffers and cylinders, faced doffers, flats and cylinders, etc.

I may say in closing that with these settings, I secured even yarn, good breaking strength and better cloth.

CONTRIBUTOR NO. 6531

Questions For "Wash"

EDITOR COTTON:

I should like to have "WASH (R. I.)" comment on the following questions, if he will; I should also like to hear from some of the other readers:

What causes an occasional bobbin of roving to be wound in the reverse direction on the English type of roving frame? All of the spindles and bobbin gears are running in the same direction, but we have found, from time to time, a bobbin that has been wound on backward, and we have hunted consistently for the reason. I know that on the Hetherington frames there are left- and right-hand skew bevels, but these are all pointing in the same direction on the respective shafts, and these reverse bobbins do not appear more than once or twice monthly. It may be that the presser on the flyer has something to do with this. Please give me the reason if you know why.

What do you think of the method of changing the draft gears of the draw frames found to be running out of tolerance instead of averaging all the frames and changing only when the average is out of tolerance and then changing every frame?

Do you think that break draft has any great effect on the evenness of the yarn and roving that is produced from the respective machinery?

J. R. (ALA.)

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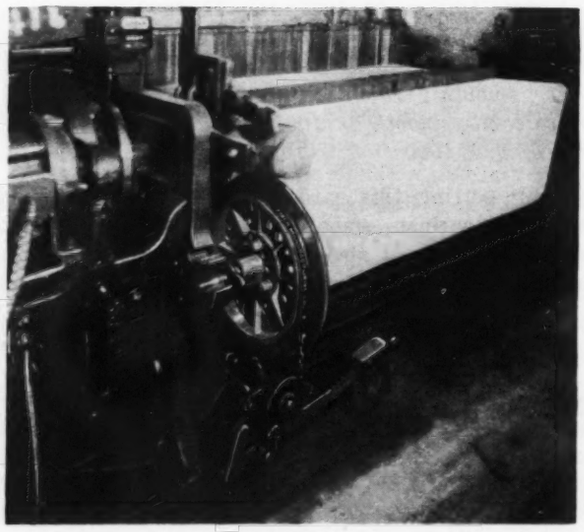

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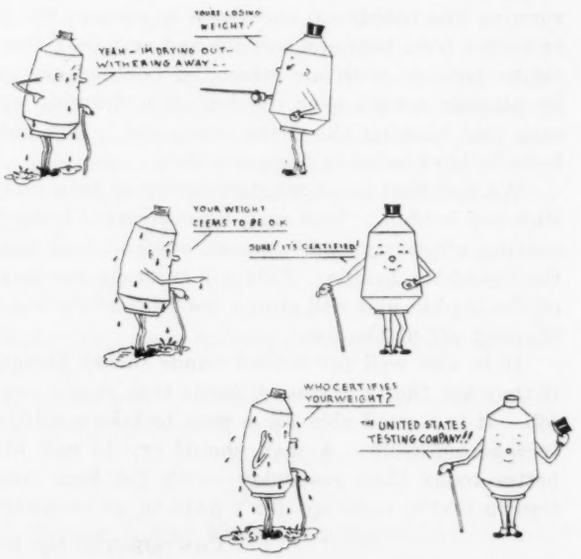
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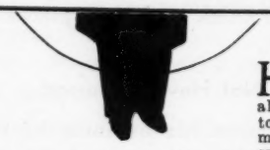

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Do You Run Hair or Flesh Side of Belt Next to Pulley?

EDITOR COTTON:

Will you please ask some of your readers if they will be kind enough to tell us which side of a single leather belt should be run next to the pulley, the flesh or the hair side.

Occasionally we find an overseer, of wide experience, who says, put the flesh side next to the pulley, claiming that experience has shown this to be the best way.

To put the flesh side next to the pulley violates all the rules that the writer has ever heard a competent master mechanic or belt engineer advance. The writer has never heard of a belt manufacturer who made double belt with the flesh side out; still, the opinion of the old timers is to be respected. I should like to hear some real arguments, pro and con.

Please see if you can get some real facts from a good belt man or two about co-efficient of friction, etc., in this line; also, let some of the old overseers have a say.

A surprisingly large number of mill men express opinions on both sides of the question, and I feel sure that your readers will be glad to have this matter thrashed out.

CONTRIBUTOR NO. 6615

Figuring the Draft on D-3 Comber

WE RECEIVED recently a query from a man who wanted to know how to figure the draft between the feed roll and the calender roll on the Whitin Model D-3 comber and we submitted the question to two correspondents. The first commented as follows:

"The feed per nip and the number of teeth in the gearing may change with different machines, but the method of calculation will remain the same . . . in figuring by the weight-of-stock method, the percentage of waste from the comber must be considered." He then gave the mechanical draft step by step:

1. Feed roll ratchet 48 teeth.
   Feed 4 teeth per nip.
   ⅞-inch diameter feed roll.

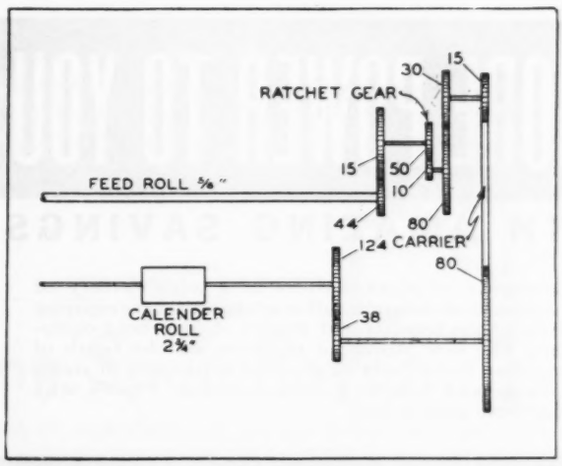
$$\frac{4 \times .875 \times 3.1416}{48} = .229 \text{ inch of cotton through feed roll per nip.}$$

2. 2¾-inch calender roll.
   Cam shaft makes ½ revolution per nip.
   39-tooth cam shaft gear.
   124-tooth calender roll shaft gear.

$$\frac{1 \times 39 \times 2.75 \times 3.1416}{2 \times 124} = 1.358 \text{ inches of cotton through calender rolls per nip.}$$

3. Draft between calender roll and feed roll is:

$$\frac{1.358}{.229} = 5.93$$



The second man answered the question like this:

"Draft calculations are always the same and the only problem is to properly follow the driver and driven gears so as to keep the figures in the proper order. The simplest rule is to consider the front or delivery roll as a *driver*, and put its diameter above the line and the gear upon it that starts the train of gears to the feed roll as a *driven* gear and put the number of teeth below the line, and then proceed with each gear alternating from drivers to driven, and omitting carrier gears. When a ratchet gear is encountered, the total teeth in the gear should be figured in the proper sequence, and the pawl figured as a gear of the same number of teeth that the pawl engages, each time it oscillates. To illustrate, if a ratchet gear of 50 teeth is being driven by a pawl that jumped two teeth on each stroke, the calculation would be the same as though a 50 tooth gear was being driven by a 2-tooth gear.

"I have not worked on the Model D-3 Whitin comber, so I am not familiar with the size of rolls or gears, but I know the feed roll is driven by a ratchet mechanism instead of a star gear and pin. The calculation here is given for the gears of the Model D-2, substituting the ratchet and pawl, in place of the star gear, and assuming the ratchet gear contains 50 teeth and the pawl engages 10 teeth on each swing.

$$\frac{2.75 \times 38 \times 15 \times 80 \times (50) \times 44}{124 \times 80 \times 30 \times (10) \times 15 \times .625} = 9.9 \text{ draft."}$$

Should a Weaver See All Cloth as It Is Woven?

EDITOR COTTON:

Does a weaver have to see all of his cloth as it is woven in order to make perfect cloth? How often should a weaver patrol his alley in order to make cloth free from the following defects: mispicks, jerked-in filling, thin places, thick places, wavy cloth, oily warp threads, oily filling, ends out, reed marks, break-outs, bad selvages, pick-outs, undershots, overshots, mixed filling, reedy cloth, misdraws, and bad harness?

Should a weaver be given an assignment of looms so large that he can see each loom once during the

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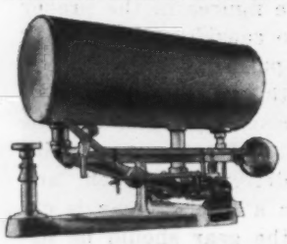

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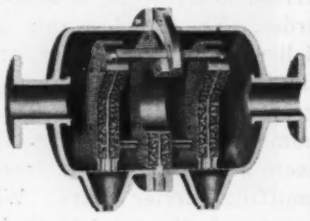

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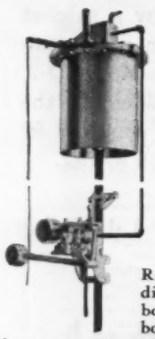

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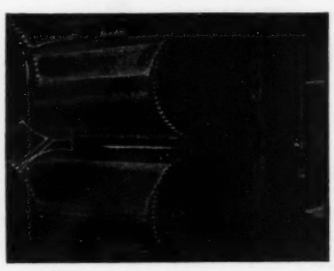

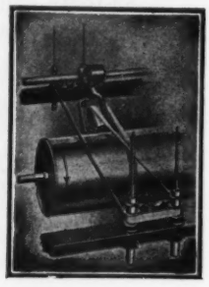

time it takes the loom to weave from 1 to 5 yards of cloth or should the assignment be just large enough so that he will be able to see all of the cloth that is made by the loom?

On 96 x 65 goods with a loom speed of 120 picks per minute, it takes 19½ minutes to weave a yard of cloth and 1 hour and 37½ minutes to weave 5 yards. On these goods it takes about 3.80 minutes to weave 7 inches of cloth, which is about all the cloth the weaver can see before it goes over the sandroll. Should his load be so that he can see part or all of the cloth woven?

I would like to see some answers to these questions in COTTON and for the man answering to state what he thinks is a fair patrolling time for a weaver to have so that perfect cloth may be produced.

CONTRIBUTOR NO. 6607

Details for Running Spun Rayon

This contributor read the question on how to run spun rayon in the December issue and then loosened up in a large way . . . . . .

EDITOR COTTON:

On page 105 of the December issue of COTTON, "CONTRIBUTOR NO. 6601" asks a number of questions pertaining to the running of spun rayon on regular cotton mill machinery, and I would like to take this opportunity to give the readers of your "HOW OTHER MEN MANAGE" department and "CONTRIBUTOR NO. 6601" the benefit of my experience, for the time is coming, I believe, when we all will have to loosen up and spill what we know on this subject so that we can run this fiber at all.

The spun rayon which we process is 1½ denier and is 1½-inch in staple, being made into 40s yarn with a twist multiple of 3.5 times the square root of the number. The bale opener is not used in our plant because if the operative feeding the rayon down the chute from the bin room to the breaker picker pulls the rayon apart quite thoroughly, this is all that is needed. It is important, however, that the rayon be pulled apart because it is received at the mill in an average weight bale of 370 pounds and is highly compressed for shipping purposes. We have seen some overseers use a waste machine to fluff the stock, but this is a waste of time and effort because there is so little production through the waste machine. The best method is to only fill the chute about half full and the rayon will not mat down and choke the hopper.

Breaker Pickers

The same screen and grid bars that are used for cotton are used in running spun rayon; the only change is that the grid bars are closed as tight as possible so that only a little rayon drops in the bottom of the picker and these droppings may be used again by mixing it again as rayon dropped down the chute. The fans must be run at a speed that is fast enough to keep the rayon from dropping through the grid bars, but not so fast as to cause excessive vibration in the fan bearings and casing. The fan speed on our Buckley breaker is 1300 r.p.m. The beater speeds are, on the 40-inch diameter, 42-inch wide Buckley beater, 430 r.p.m., on the 18-inch diameter, 42-inch wide, 2-blade beater, 850 r.p.m., and on the 15½-inch diameter, 42-inch wide pin beater, 775 r.p.m.

The settings for these beaters are: 15½-inch pin beater, ½-inch; 40-inch Buckley beater, ¾-inch; and 18-inch 2-blade beater, 7/16-inch. The blows per inch are 52 and the r.p.m. of the 9-inch calender roll is 9. We run a 14-ounce lap and the percentage of droppings is very small.

Finisher Pickers

As rayon makes a smooth-looking lap, only two processes of picking are necessary. It is best to line the finisher pickers so that 4 laps are run at the back apron, the same as cotton, and the weight of the lap may be secured the same as usual. The one item to bear in mind about running rayon is to keep the inside of the picker and beater box just as clean as possible and try to avoid having excess oil running out of bearings and down inside of the beater box or around the end of the calender rolls because rayon will soak oil quickly and the yarn will be discolored and cannot be washed to its natural color. The rayon which we run can be processed without using binders in the breaker and finisher laps as the laps will not split even when made into their full weight. To run a compact lap, it is well to use a small weight on the lap rack but too heavy a weight will bind the lap roll and racks. The atmospheric conditions will have a great effect on the weight of lap required. Some further information of interest on the finisher picker is: 18-inch, 2-blade beater run at 900 r.p.m.; fan run at 1200 r.p.m.; 9-inch calender roll run at 8.5 r.p.m.; blows per inch, 25.3; weight per yard, 11.5 ounces; and the beater is set to the feed roll 5/16 of an inch. (Note: The beater settings are made from the edge of the blade to the outside of the feed roll nearest the edge of the beater blade.)

Cards

On the cards, the rayon has a tendency to come outside of the screen under the cylinder and settle along beside the card. One way to prevent this is to cut the width of the lap from the finisher picker by two inches. This may be accomplished by building up the picker cheeks one inch on each side and by doing the same to the lap guides, directly over the split lap preventer, and the lap roll must be cut down to the width of the lap required; a wooden block may be run on each side of the lap in the card to keep the lap an equal distance from each side of the card. However, this last arrangement is needed only when oil runs from the cylinder bearing box and down inside of the card frame causing fly waste to stick to the oily surface of the card. If the card grinder will always touch up his screen settings to find the best possible setting

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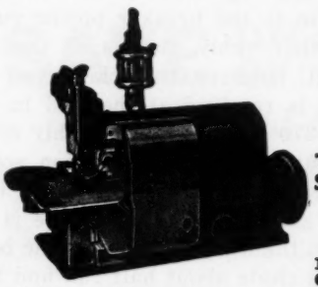

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for his section, and keep the inside frame of the card clean, this condition will not be troublesome and the regular width lap may be run.

When running rayon on the cards equipped with mote knives, a blank sheet of zinc should be slipped down over the mote knives and shaped to the bevel of the licker-in and the licker-in screen. When the cards are equipped with duplex rolls, the rolls and brackets must be removed and an 8⅞-inch section of screen must be put in from the edge of the screen and brought up to within ⅜-inch from the edge of the feed plate; this section can be bolted to the screen on each side and it will be as firm or as substantial as any part of the screen. The end of the screen section that is newly attached should be set ¼-inch from the edge of the licker-in teeth.

Stripping should be done at 3-hour intervals to secure the best results—has been our experience.

About every 12 or 14 working days the card cylinder, doffer, and flats should be ground lightly to remove the film of oil from the surface of the wire. If they do not get this grinding the web will be cloudy and bunchy and will not run between stripping times without the cylinder filling with stock.

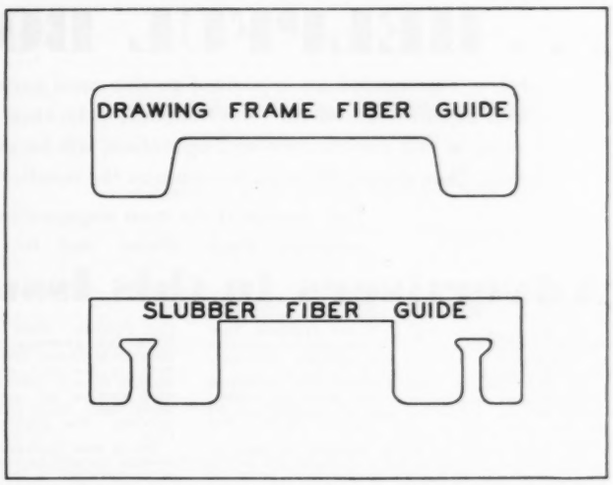
There should be little waste per card that cannot be processed again with the regular stock; the cylinder, doffer, and flat strips, also the clean waste, should be run again as soon as possible to prevent an accumulation of it. The percentage plate must be set as closely as possible to remove the least amount of flat strips and still to have the web clear and clean. The re-workable waste should not be anymore than 4 per cent, and the under-screenings and invisible loss should not be more than one per cent.

Other card data are as follows: Weight of card sliver, 44.4 grains per yard; relative humidity set at 7½ per cent regain; speeds, licker-in, 420 r.p.m.; doffer (27.75-inch diameter), 6 r.p.m.; 2-inch coiler on calender roll, 95 r.p.m. The flats are driven at a rate of two flats per minute by removing the flat driving pulley and driving from the bare cylinder shaft. Draft of card, 113, and the settings are: doffer to cylinder, 7/1000; licker-in to cylinder, 7/1000; flats, 10/1000 at all points; feed plate to licker-in, 10/1000; cylinder screen at back, 22/1000, middle, 34/1000, and front, ¼-inch. Stripping plate top, 7/1000, bottom, 9/1000; front plate, 24/1000, back plate top, 22/1000, bottom, 21/1000; and mote knives with blank screen cover, 10/1000-inch.

Drawing Frames

Only two processes of drawing frames are needed. The speed of the front roll is 275 r.p.m., the weight of the sliver on the breaker drawing is 58 grains and on the finisher is 65 grains per yard, the draft on the former being 4.5 and on the latter 5.4. On drawing frames equipped with revolving clearers, 75 per cent production may be taken off without any trouble, whereas on the stationary clearers the production is lower and the quality is not as good because the small percentage of oil in rayon causes a plucking of clearer waste off of the top clearers should they not be cleaned often.

Rolls on drawing frames should be set 1¾-inch and 1⅞-inch from center to center. Also, to help overcome the static by keeping the sliver more compact and by controlling the edges to prevent an accumulation of short fibers around the top of the trumpet, a fiber guide should be used. See accompanying illustration, Fig. 1. It is not worthwhile to have parts of the drawing frames re-plated because the plating chips off and causes bad work at a later time by putting small bunches in the sliver, which accumulate on the chipped plating.



Three Processes of Roving

The slubbers are 11x5½, making .55-hank roving. The spindle speed is 465 r.p.m.; front roll, 213 r.p.m.; lays per inch, 6.5; draft, 4.3; twist multiple, .80; rolls set 1¾-inch and 1¾-inch; production is about 70 per cent. A fiber guide as shown by the illustration (Fig. 2) should be run on the slubber for the same reasons as given for their use on the drawing frames. The roving bobbins, from slubbers to the finished hand of 6.00, should have a special finish, or should have a paper tube slipped over the barrel of the bobbin to prevent the rayon from sponging oil out of the bobbins and discoloring the rayon. The best results have been obtained by using cork top rolls on the slubber.

The first intermediate is a 9x4½ and makes 1.60-hank roving from .55-hank doubled; speed of spindles is 740 r.p.m.; front rolls, 203 r.p.m.; draft, 5.7; twist multiple, .87; roll setting, 1⅝-inch and 1¾-inch; lays per inch, 11; and production is about 73 per cent. No roving guides are needed after the slubbers but the clearers must be dusted with whitening powder at the start of each shift in order to dry the light film of oil from the surface of the top rolls as this oil will cause the clearer waste to stick to the clearer cloth on the top clearer covers. The top clearers should be picked twice a doff. Cork rolls are used on this process. The relative humidity is set at 8 per cent regain and the same oiling and cleaning schedule is used as will be given later for the slubber.

The roving frame is a 7x3½ and makes 6.00-hank roving from 1.60-hank double. Speed of spindles, 1025 r.p.m.; front roll, 143 r.p.m.; draft, 7.5; twist multiple, 1.00; roll setting, 1 9/16-inch and 1 11/16-inch; lays per inch, 31; production is about 80 per cent. The top clearers are picked thrice a doff and the bottom clear-

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232. Condenser Tape Lacing Equipment—Describing in detail the new Clipper condenser tape lacing equipment, this folder contains table of decimal equivalents, prices, specifications and illustrations of the lacer, hooks and cutter. Clipper Belt Lacer Co., Grand Rapids, Mich.

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236. Lunkenheimer Catalog—describing and listing the entire Lunkenheimer line of Valves, Water Columns, Water Gauges, Gauge Cocks, Fittings, Unions, Air Nozzles, Lubricators, Oil and Grease Cups, etc. The Lunkenheimer Co., Cincinnati, Ohio.

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38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

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CONTINUED ON PAGE 122

ers are picked twice a doff; cork rolls are used; the relative humidity is set at a regain of 8 per cent.

Note: Some mill men will prefer a 4-process roving layout instead of 3 and if so, this will be as follows: .55-hank doubled into 1.25-hank, doubled into 3.00, doubled into 8.00-hank, doubled into 40s yarn. The same twist multiplier that has been given may be used, including a multiple of 1.02 on the jack or fine roving frame when running 8.00-hank with a spindle speed of 1250 r.p.m. This gives a comparative draft from slubber to finished roving as follows:

3 Process					
Hank roving	.55	1.60	6.00	40s	
Draft	4.3	5.7	7.5	13.3	
4 Process					
Hank roving	.55	1.25	3.00	8.00	40s
Draft	4.2	4.46	4.76	5.33	10.0

The slower the spindle speed, the lower the twist multiple may be, and the more even the work will be because the tension may be controlled more easily. Spun rayon may be run at faster spindle speeds than listed here, but tests show less production and an increase in bad work in stretched roving and soft bobbins because the tension is not controlled as well as with the slower speeds.

The reader will bear in mind the special finish or paper tube needed for the roving bobbins as the least bit of oil in the roving bobbins will be sponged out by the rayon. Forgetting this fact may cost the company a sum of money because oily rayon is unfit for use.

Spinning Frames

Making 40s single the twist multiple is 3.50 × the square of the number; spindle speed, 7800 r.p.m.; top front roll is cork; roll setting 1 3/16-inch and 1½-inch; "D" type traveler used; and relative humidity set at about 8½ per cent regain. The thread board should be set the same distance from the top of the bobbin as the length of the traverse up and down on filling wind; this is approximately 1¾ inches. 95 per cent production is average on a warp bobbin. Average twists for filling yarn are 3.50 times the square, warp 4.50 and for ply yarn 3.50 times 5.00. Breaking strength is about 36 pounds.

Cleaning and Oiling Schedules

Slubbers and first intermediates: Beams, flyers, bob bin rail covers, top and bottom clearers are cleaned on the doffs. Two lines of top clearers are picked a doff; back boards are wiped every two doffs; spindles wiped every 8-hour shift; floor swept 3 times daily; gears cleaned every 40 hours; backs cleaned twice every 40 hours; top rolls and steel rolls cleaned twice every 40 hours.

Oiling schedule for slubbers and first intermediates: Top front rolls oiled twice and top back rolls oiled once every 40 hours. Bottom rolls back oiled once and bottom rolls front oiled twice every 40 hours. The spindle bolster oiled twice every 40 hours.

Cleaning schedule for roving frame on 6.00 hank: Beams, flyers, bobbin rail covers, top clearers, bottom clearers, and steel roll wiped every doff; head ends and foot ends wiped once each shift; spindles wiped every 16 hours; gears wiped every 40 hours; backs wiped twice every 40 hours; top rolls cleaned and bottom steel rolls cleaned thoroughly twice every 40 hours; main alleys swept 3 times every 8-hour shift; back alleys swept twice every 8-hour shift. The oiling schedule is the same as on slubbers and first intermediate roving frames.

This answers all of the questions asked by "CONTRIBUTOR No. 6601" on how to run spun rayon. I hope that all the readers of COTTON will come forward with any information regarding the processing of this fiber so that we can all profit by the experiences of everyone.

CONTRIBUTOR No. 6605

1936 Rayon Production Breaks All Records

Both production and consumption of rayon yarn in the United States broke all previous records during 1936, according to figures compiled by the *RAYON ORGANON*, published by the Textile Economics Bureau. Consumption last year, however, was substantially in excess of output, resulting in a sharp drop in surplus stocks which amounted to only three days' requirements at the close of 1936.

The output of rayon yarn last year amounted to 277, 626,000 pounds, the highest annual total in the history of the industry and an increase of 8 per cent, compared with output of 257,-557,000 pounds in 1935. Production of viscose plus cuprammonium yarns totaled 214,926,000 pounds against 202,-010,000 pounds in 1935, a gain of 6 per cent, while acetate yarn output of 62,700,000 pounds was up 13 per cent from the 1935 total of 55,547,000.

The 1936 consumption of rayon yarn, representing total shipments plus imports and less exports, amounted to 297,594,000 pounds, an increase of 18 per cent over 1935 consumption of 252,676,000 pounds. If rayon staple fiber data were added, consumption would aggregate 323,000,000 pounds in 1936 against 259,300,000 pounds in 1935, or an increase of 25 per cent.

Because of the heavy consumption last year's surplus stocks were reduced by 21,533,000 pounds during the year to the lowest total on record and equal to only three days' requirements at the close of last year.

Textile Research Symposium Held at Chapel Hill

A symposium on textile research was held as part of the joint meeting of the American Physical Society and the Southeastern Section of this society in Chapel Hill, N. C., February 20. The symposium emphasized the applications of physics in the textile field. A paper was read by Wanda K. Farr, of the cellulose laboratory, Boyce-Thompson Institute for Plant Research, on "Structure of the Cotton Fiber". A. C. Walker, Bell Telephone Laboratories, New York, told of "Moisture Content and Electrical Properties of Cotton". "Place of Statistics in Textile Research" was read by John P. Elting, Kendall Mills, Paw Creek, N. C., and "Physical Basis of Color Measurement" by A. C. Hardy, Massachusetts Institute of Technology.

Stuart of Colgate-Palmolive-Peet Promoted to Managership

Martin V. Stuart, manager of the glycerine sales department of the Colgate-Palmolive-Peet Company, has been appointed manager of the industrial sales department in addition to his present office. Mr. Stuart succeeds Arthur F. Danz who has joined Kirkman & Son as vice-president.

HELPFUL BOOKLETS FREE...

Continued from Page 120

tages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

94. New Development by Onyx—Eight page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

—106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication—Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. Some Properties of Starch and Dextrine—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., 1934 Dana St., Cincinnati, Ohio.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Contaiinng complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese, from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, New York.

124. New Condensed Catalog on Ball Bearings and Power Transmission Units—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

127. Vim Short-Center Drive with Vim Tred Leather Belting—16 page booklet outlining the special requirements of belts for short-center drives and the proper adjustment to give the highest efficiency. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

130. Three New Textile Scouring Agents—This 32-page book gives many valuable formulas for the use of Houghton's Wonder Powder—a new type of colloidal detergent—in fulling, scouring and finishing nearly all types of woven and knit goods. Also contains several pages of valuable reference and conversion tables. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

131. Houghton's Leathers for the Textile Industry—This valuable handbook contains 88 pages of data in the proper selection and application of all types of textile leathers, including belting, special spindle belts, round leather belts, loom leathers, mill strapping, leather aprons, etc.—E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

134. STA-PUT Lubricants—A brief description of an entirely new line of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problems of lubrication of textile equipment covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div., of Raybestos-Manhattan, Inc., Passaic, N. J.

143. Winders and Winding—Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

147. Let's "CAN" The Oil Can—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

152. Plant Checkup List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1274 on the P.I.V. Gear—giving details of this positive variable speed control. Link-Belt Co., 910 South Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drives. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, 95 South St., Boston, Mass.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

165. New Departure Speed Power Unit—Bulletin giving details of this compact, self-contained driver that gives a thousand different speeds at a turn of the wrist. New Departure Manufacturing Company, Bristol, Conn.

166. Better Cones The World Over—Bulletin describing the Universal No. 50 Winder for silk and rayon. Universal Winding Company, 95 South Street, Boston, Massachusetts.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

169. Tube-Tex High Speed Steamer and Finisher—Describing these new steaming and finishing machines for tubular knitted fabrics, which handle cotton, rayons, woolens and mixtures at speeds up to 45 yds. per minute, being unique in that patterns, designs and stripes are furnished straight and free from any distortions. H. W. Butterworth & Sons Co., York and Cedar Streets, Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-Belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including: bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C..

177. New Advances in Loom Equipment—12-page booklet describing discoveries and advances which loom manufacturers have made in keeping pace with these discoveries down to the present time—non-technical information, amply illustrated. Emmons Loom Harness Co., Lawrence, Mass.

179. Improved Airplane Propeller Exhaust Fans and Ventilating Equipment—a 40-page catalog showing the important factors to be considered in a propeller type fan to secure the greatest efficiency, with data and tables showing fan capacity and details of each type and size of fan and views of typical installations. Propellair, Inc., Springfield, Ohio.

180. These Extra Cushion Cork Cots Offer Six New Advantages—a 6-page folder which tells the story of the new Armstrong's Extra Cushion Seamless Cork Cot from the viewpoint of the mill man. The folder describes HOW the new cot is of advantage to mills spinning cotton yarn; WHY it is better, and something about the method of manufacture, and also gives PROOF in the form of some tests that have been made with this new roll covering material. Armstrong Cork Products Co., Textile Division, 930 Arch St., Lancaster, Pa.

183. Schieren-izing—describing leather belt manufacture from the selection of hides through the various processes to the final tests, also showing illustrations of belts with unusually long service lives. Chas. A. Schieren Co., 31 Ferry St., New York, New York.

184. Speed Control Handbook T-35—new reference book on variable speed control, said to be the most complete and helpful book on this subject ever published, 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. duPont de Nemours & Co., Finishes Division, Wilmington, Del.

186. F-7 Feeder Bulletin — Describing the better blending that is secured and the important cleaning operation that is added by using F-7 feeders in place of bale breakers. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

187. The Wildman Single Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the March issue of COTTON.

Fill in here numbers you select from both pages .....

.....

Name .....

Firm name ..... Position .....

Street .....

City & State .....

List Items You Want and Tear Out and Mail Coupon Now!

●

Please be sure to fill in your Firm's Name and your Position on the Coupon. This service cannot be extended to you unless this information is furnished.

STRIPES...STRIPES
...and Plaids!

With the addition of the horizontal yarn-changing striping attachment the scope of the HH-PW MACHINE has been further increased to include stripes and plaids—with or without clox or all-over wrap designs.

Thus the possibilities of this true wrap machine, with its 24 wrap yarns and 18 steps for patterning, are greater now than ever before. This improvement added to the well-known HH efficiency and economy, which eliminates separate ribbing machines and costly hand transfer of ribs, makes the HH-PW an even more versatile machine and considerably increases its profit-making abilities.

HH-PW MACHINE

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

366 BROADWAY, NEW YORK, N. Y.

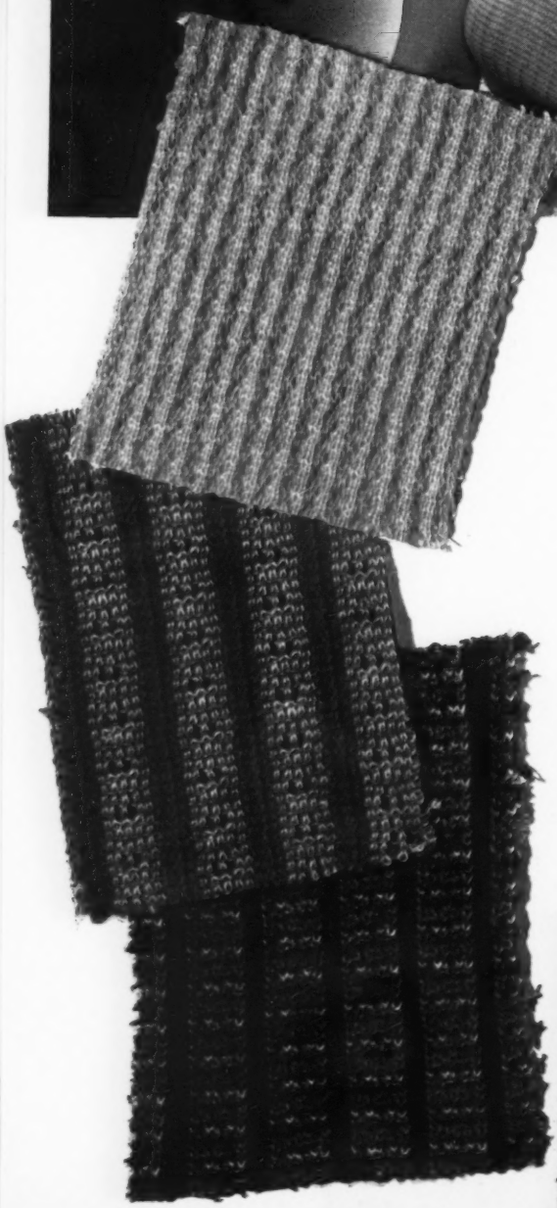
Now that needle selection *in the cylinder* has been added to the Automatic Double Butt Tuck Machine it is possible to float yarns over any selected group of needles and produce vertical stripes in colors by using different colored yarns. Thus, the range of this versatile machine, noted for its speed and economy, is still wider . . . and the new colors combined with the snug, form-flattering merchandise it produces, such as that illustrated here, offer many new opportunities for profitable selling.

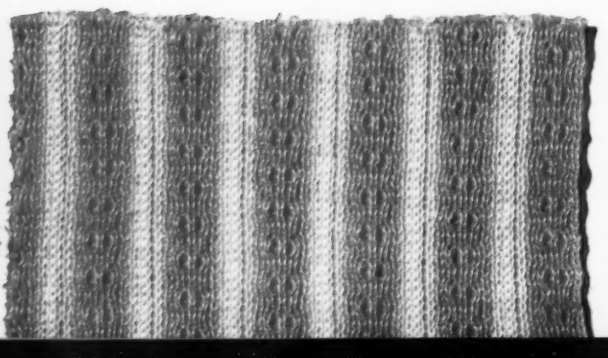
ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

366 BROADWAY, NEW YORK, N. Y.





"This is the Scott & Williams Machine Age"

KNITTING SECTION

Hosiery Men Meet in New York

On the evening preceding the two-day conference, the officers and directors of all the associations were the guests of the National Association of Hosiery Manufacturers at a dinner held at the Waldorf-Astoria Hotel. over 60 attended . . . . . .

A PROFITABLE two-day session of The National Association of Hosiery Manufacturers was held at the Waldorf-Astoria hotel the week-end of February 12 with nearly 300 manufacturers present. Notable among the resolutions adopted was the favoring by the association of "reasonable and practical legislation governing hours, wages, and fair trade practices, provided enforcement is by the government itself."

Dr. Willard L. Thorpe, director of economic research for Dun & Bradstreet, in a speech before the assembly, informed that through the enforcement of the Robinson-Patman Act the special discounts formerly permitted chain and other group organizations had been almost eliminated, but that the new law had not affected general price levels. He pointed out that at present there are a number of cases on docket which evidence that violations of this act will be prosecuted. Dr. Thorpe explained that under the act trade discounts are possible only when no competitor or buyer is injured thereby, and that the act is principally to prevent the rebates given, which are disastrous to the smaller retailers.

It was decided that the Federal Trade Commission will be asked to hold a trade practice session in Washington to aid the industry in deciding upon the proper marking of goods as to quality and contents. The association favored the universal application of these provisions. Inspection and grading standards for women's full-fashioned silk hosiery are to be set as soon as certain points are settled.

Those present agreed that present costs warrant higher prices and speakers suggested that the trend toward higher levels is so evident that orders at present quotations should not be accepted.

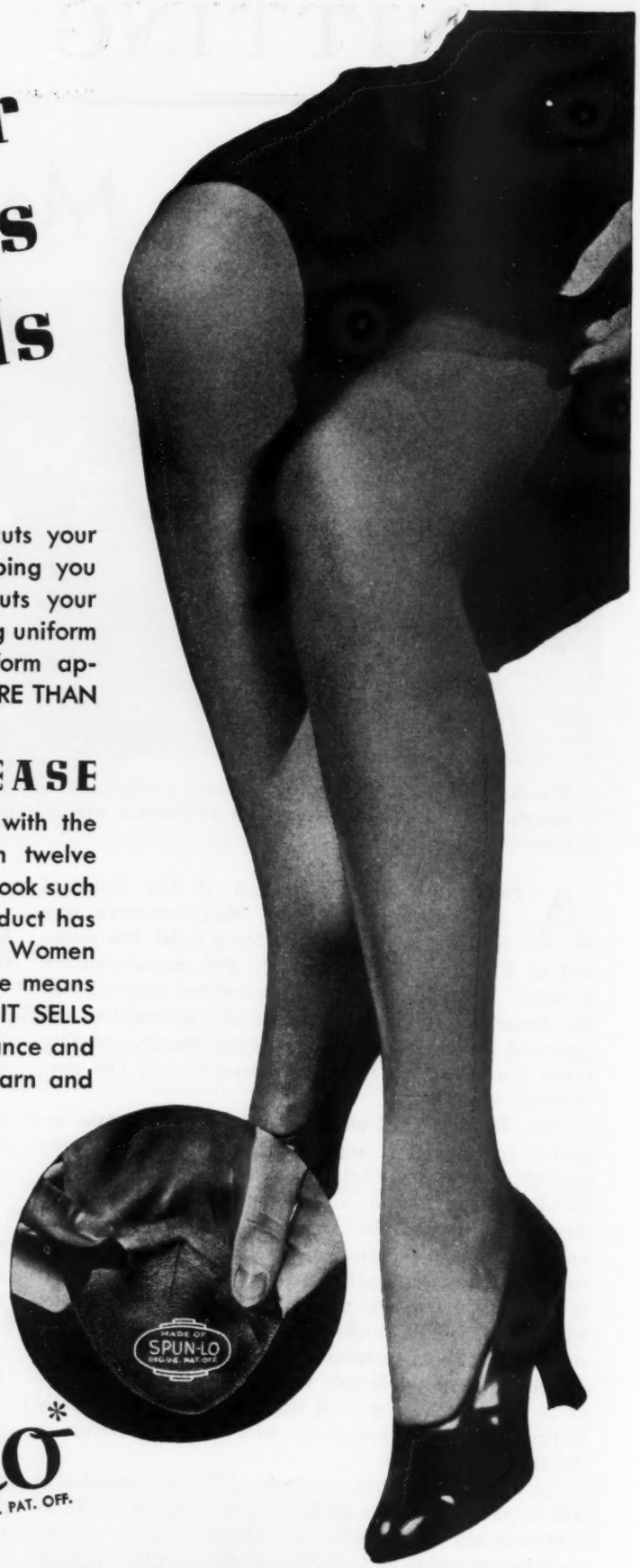
Earl Constantine, managing director of the National Association, announced certain actions which were taken.

A general canvass of the industry will be conducted in the interest of checking such departures as may have taken place from those provisions of the code which related to the proper marking of the quality and contents of hosiery.

A sound policy and practice will be evolved for the consideration of the industry with reference to returned goods. An effort will be made which will allow the industry to put into practice generally the uniform conditions of sale which were developed under the recent code. The conditions are of such a nature which will make for firmness of contractual obligations and will reduce the possibility of disputes.

The Hosiery Industry study, which was decided upon in April, 1936, has been completed in preliminary draft, and, after certain revisions, it will be published in a limited edition and made available to the industry. This study analyzes all of the factors and problems of the industry and draws conclusions and recommendations for the guidance of the members of the industry. It is an unusual undertaking, with little, if any, precedent in American industry.

It cuts your knitting costs and seconds



SPUN-LO yarn cuts your knitting costs to the bone by helping you to step up machine activity. It cuts your "seconds" to a minimum by assuring uniform lengths, uniform dyeing and uniform appearance. Yet—IT COSTS NO MORE THAN ORDINARY YARN!

56% SALES INCREASE

When sales of hosiery identified with the Spun-lo Transfer step up 56% in twelve months, well . . . you just can't overlook such overwhelming evidence that a product has what it takes to please the public. Women everywhere know the Spun-lo name means quality. Buyers everywhere know IT SELLS . . . because of its lovelier appearance and longer wear. Use Spun-lo rayon yarn and you, too, will step up sales.

Spun-lo*

*REG. U. S. PAT. OFF.

RAYON YARN MAKES BETTER STOCKINGS

INDUSTRIAL RAYON CORPORATION · CLEVELAND · OHIO

The conference declared itself in favor of a continuance of the 5-day week created under the code, and since then voluntarily maintained in general effect by the hosiery industry. This permits Saturday morning operations only in the shipping department and in the office. It also declared itself in favor of flexibility of finishing operations in a form which would permit finishing operations to be extended to not exceed 10 hours per day within the days of Monday to Friday inclusive, for not more than 10 weeks within each calendar half-year, any such excess hours to be offset by shorter hours within the same half-year. Continuance of the 40-hour work week was favored.

William H. Gosch, president of the association, directed the discussions, being assisted by Mr. Constantine.

System for Scheduling Dye Lots

By J. A. Crumley

WHILE WORKING under very crowded conditions several years ago I promised myself that if ever we secured more room some changes would be made to alleviate the unfavorable working conditions. With insufficient space to properly operate or arrange the day's work we were continually back-tracking and doing some work almost twice. That is a condition, however, that most mills sooner or later encounter and is nothing new to most of us. How I arranged the work for the new building is the purpose of this article, the main idea of which is the same old formula of the shortest distance between two points.

While making a short talk before a group of textile men some few weeks ago I stressed the point that there are four "M's" in the dye house, namely, Men, Materials, Machinery, and Minutes, and I was interrupted by a listener who said that there are five. There is a fifth M and it is all important one, being that old stumbling block called Mistakes. We are permitted few mistakes in the dye house because most of them are not easy to correct. A crowded room is a great breeder of mistakes and if the daily schedule of routine work is not properly planned there will be cross-ups galore.

To plan the work for each day more properly I have a planning board above my desk on which I can tell at a glance just where every lot in the dyehouse is and when it will run. This board as you will note in Fig. 1 is a small board on which are arranged two rows of paper clips, each of which corresponds to a dye machine in consecutive order as they are arranged across the room. During the course of a day's work I get the information from the gray goods department of what will be run for tomorrow and then fill out the small envelopes seen clipped under the holders, Fig. 1. The top row of holders indicates the runs to be put in machines 1, 2, 3, 4 and 5 in consecutive order left to right. They are also arranged in the order of top envelope to be run first, second envelope next, and so on.

Thus rush runs go first without further checking if the schedule has been properly arranged the day before. If the shipping department should need a certain run after the day's work has started it is easy to put that run on top of a stack and it will come next in the regular order. If there are no rush lots for the next day then I arrange the work with the lots of lightest color first and next darkest and so on, so there will be no machines to clean.

Fig. 1 as you see is arranged for tomorrow's work and is as I leave it in the afternoon. I weigh up a bucket of dye for each run and place the buckets in exactly the same left to right order as the board shows with a small slip stuck on each dye bucket noting the style and color. It will be noticed that the bottom row of clips is empty because these show the runs in dye machines dyeing.

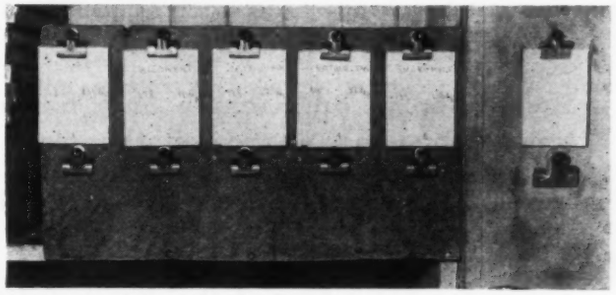


Fig. 1

Before locking up in the afternoon my assistant comes to this board and numbers the envelopes on top 1, 2, 3, 4 and 5, across left to right, and then takes them out and hunts up the lots called for and places them in front of corresponding machines by number. The envelope is placed in a holder on each machine and thus we find everything ready to go when we come in the morning. There is no lost time getting started for the day's work.

Starting the day's work, the buckets of dye are carried from the weigh room to a special stand with partitions equal to the number of dye machines and here they are stirred and mixed with hot water. Each bucket is in the same left to right order as the dye machines run and when the small slip of style and color is removed it is checked with the envelope at the machine. The bucket of dye is placed at the dye machine and the lot and envelope are again checked against each other by the operator.

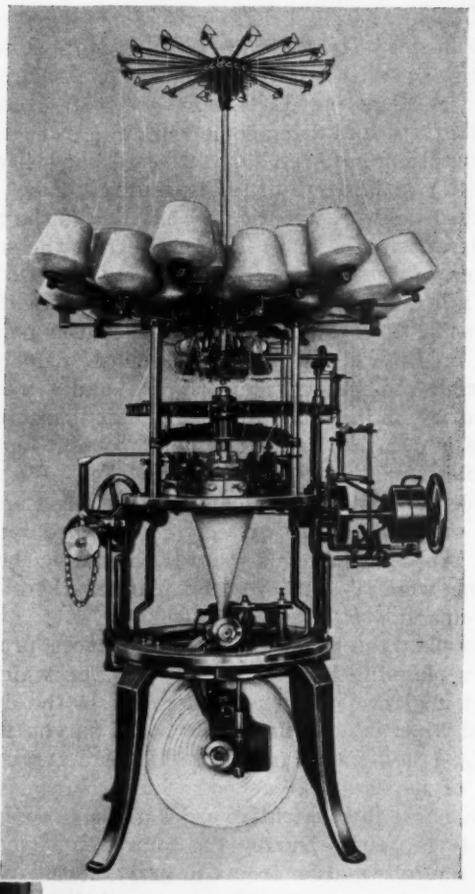
The slips are returned to the laboratory with the envelopes, the slips going in the formula boxes to be used again. The envelopes go under the bottom row of clips to show that those runs are in process of dyeing.

Across the top of my desk are arranged 5 boxes in exact order to the machines, containing the formula of all previous dyeings of that color and with a color sample to be matched. Thus when the first sam-

another important
WILDMAN
announcement

WILDMAN
THE WORLD'S STANDARD

The New MULTIPLE FEED RIB MACHINE



A 16 feed machine producing approximately 100% more than an 8 feed machine at a price only about ⅓ higher.

Saves 50% floor space, with saving in power delivery equipment and power.

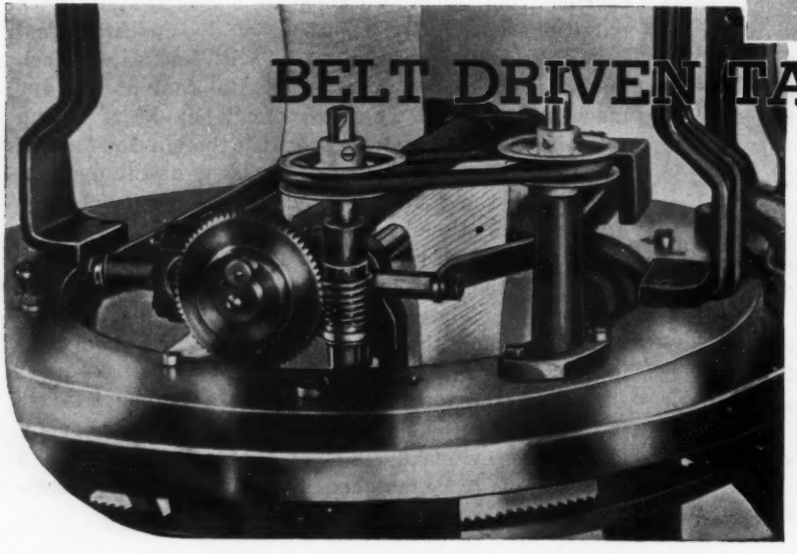
Rolls of fabric on machine only half usual time. Hence, less chance of oil spots.

Moving parts always in balance, permitting higher speeds.

These are but a few of the many outstanding features of the New Wildman Machine... offering every modern improvement... every automatic control essential to lower cost, efficient, uniformly high quality production.

Investigate . . . Send for Special Descriptive Literature

WILDMAN MANUFACTURING CO.
Norristown, Pa.



BELT DRIVEN TAKE-UP

One of Many Important Wildman Features

Ball and roller bearings used throughout, making it most sensitive and trouble free take-up ever built into a circular knitting machine. Belt drives direct to pulley on the worm. No intermediate bevel gears or shafts. Runs almost constantly, without jerky stops or starts.

ple is ready it is boarded and brought in the office and put on top of the right box. The boxes are kept closed to keep the master sample clean and are only opened to light and dirt when necessary to match. The formula for the run in dyeing is out of the box and is stuck slightly under the edge of the box to prevent its becoming lost. Thus dye additions to the run can be entered on formula without opening box.

When a run has been passed the envelope on the bottom row is removed from under the clip and placed under the clip at the extreme right as shown in Fig. 2. This shows all runs that have been dyed during the day and at the close will contain all the envelopes that were started that day and completed. They will be removed and counted as the day's production. Directly above the clip containing the completed runs will be noted another clip. The envelopes clipped here are

Fig. 2

turned face down and represent runs that are to be dyed at some future date or were runs put up by the gray stock department above the capacity of the dyehouse and will be dyed the next day.

When runs are taken from machines as completed the next run in the top row is automatically advanced

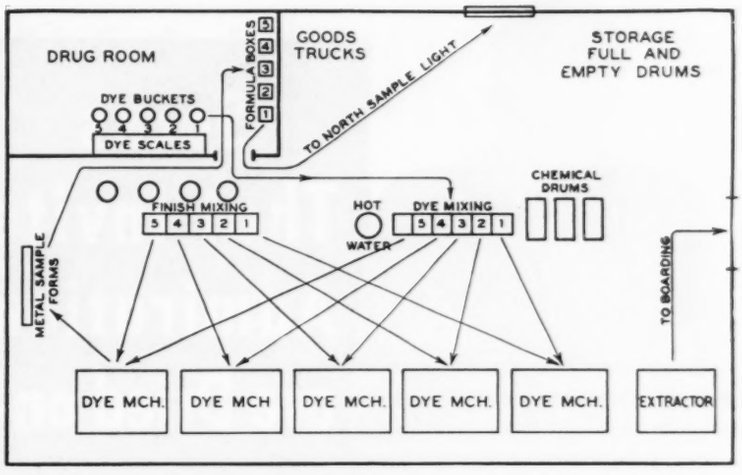


Fig. 3

to the lower and is started in dye. All envelopes showing face up also denote that the dye has been weighed out for that lot and if turned face down means not weighed yet.

There is no necessity for verbal orders under this set-up and no confusion in hunting up runs. It has reduced our errors of mixed dye lots to a minimum. If the envelopes are carefully arranged the day before being run there is no further need to consider the schedule because it will practically run itself.

As we use a standard production piecework lot ticket, it is placed in the envelope and where there are many tickets this is most convenient. These tickets go to the office as credit for dye production. Although most of this may sound slightly complicated our experience shows that it has created no additional work and has greatly helped to keep procedure straight.

After all even a wheelbarrow can be made too complicated and I for one abhor red tape, but it is worth the small bit of trouble copying the envelopes to know where every run is and when it will be needed.

Fig. 3 shows a floor plan of the dyehouse and some of the arrangement that helps to simplify the order of things.

Hosiery Shipments in 1936 Set Record

The National Association of Hosiery Manufacturers, in the current issue of its statistical bulletin of the Hosiery Industry, states that total shipments of all types of hosiery during the year 1936, at 122,700,366 dozen pairs, marked a gain of 10.3 per cent over the 111,268,099 dozen pairs shipped in 1935, and established a new high record in the history of the hosiery industry. Each of the major branches of the industry contributed to this good showing, with the single exception of woolen goods, and here shipments in 1936 were within one per cent of shipments for 1935, in spite of the comparatively mild winter season. The gains in 1936 shipments, as compared with those in 1935, in the other major branches of the industry ranged from 5 per cent in the case of cotton bundle goods to 25 per cent in the case of anklets.

Shipments of women's seamless silk hosiery, children's goods, and especially anklets, increased in December, 1936, as compared with the preceding month of November. As a result, total shipments of all types in December, 1936, showed an increase of 2 per cent over shipments of the preceding month instead of a decline of approximately 13 per cent, which past experience would lead hosiery manufacturers to expect. As compared with 12 months previous, December, 1936, shipments of 11,053,749 dozen pairs represented an increase of 27.8 per cent. Comparing December, 1936, with December, 1935, gains in the various branches of the industry ranged from 4.0 per cent in the case of children's and infants' hosiery to 62.1 per cent in the case of anklets.

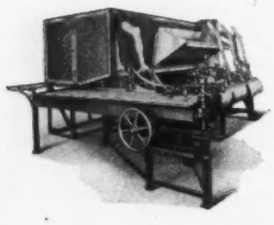
Conze Heads National Federation of Textiles, Inc.

G. H. Conze, vice-president, Susquehanna Silk Mills, was elected president of the National Federation of Textiles, Inc., at a meeting held by the board of directors late in December. Mr. Conze succeeds Peter Van Horn who was fatally injured in an automobile accident. Other business was also attended; plans were made for a meeting to be held early this year and a discussion of the various activities of the Federation took place, including the widely-known service bureaus on arbitration and design registration.

PROCTOR & SCHWARTZ HALF HOSE MACHINES

The pride women have long experienced in wearing hosiery that has been finished on the Proctor & Schwartz Boarding Machine is now duplicated in the pride men feel in displaying socks that have been finished on the new Proctor Two-Operator Half Hose Machine. The quality of the socks is greatly enhanced and it is possible for the operators to maintain a high capacity output "with the greatest of ease."

PROCTOR & SCHWARTZ · INC · PHILADELPHIA



50 Dozen Pairs of Perfectly Finished Socks Each Hour on One Proctor Machine

Causes of Uneven Lengths and How To Prevent Them

EDITOR COTTON:

One of the main and troublesome problems on a Model K Scott & Williams machine is to keep the sizes of the hose, on a number of machines of the same style, uniform as to the specification requirements of that particular style. The number of links per chain being the same, the yarns used being alike, and the same care being given the machines, still during the knitting process more or less uneven length will frequently result.

These uneven lengths of course result from a number of different causes. The purpose of this article is to discuss one in particular, which to the writer's experience, caused an investigation which led to a solution of this problem.

Before going into this particular kink, however, I would like to touch on other possible causes of uneven lengths, with the hope that this discussion may help others who may be having trouble of this nature.

It had always been the practice in our mill, until a year ago, to do our sizing of the hose as they dropped from the machine, on regular wooden forms, which is a common practice in many mills. These hose were sized twice per day, one hour after starting time in the morning and at one o'clock in the afternoon. The sizing was done by an experienced fixer. Our mill allowed, by that system of sizing, one-half inch as to total length. That is, if the hose was one-half inch short or long as to total length, it was passable to the inspection departments. During the course of the sizing of the stockings by the fixer, there was always an adjustment or so to be made to the machines to keep the lengths the same.

But there seemed to be too much variation from time to time. More than we felt was permissible, so by thorough investigation of the causes we discovered the following remedies.

Are All the Links the Same?

First. We found variation as to the number of links per chain of the same style. There would be at times two or more machines where the chains did not agree with our specifications on that particular style. Asking why this was so when we have specifications which show clearly the number of links for each part of the chain, we found that the fixer himself was to blame. The fixer makes all the size and style changes.

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need no conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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As a part of this change of course it is necessary to change the chains to agree with the specifications. We found that the fixer counted his chain links too fast, resulting at times in a mis-count. But it was that miscount which gave us part of our trouble.

We discovered also, and by this statement I do not wish to say that all fixers do this, that they would at times intentionally take out or add links in the chain, to get out of certain troubles. This was done without the permission of the head fixers, and was discovered only by a check of the links, which was carried out by a disinterested party. Where a large number of machines are run, it can be seen how things of this kind are done, so as a prevention of further trouble along this line, we check our chains now once a month. The results are worth the trouble.

The Stitch Graduating Attachment

Second. All of our K machines are equipped with the stitch graduating attachments. Right here can be the source of a great deal of variation in lengths. This happens simply because the graduating attachment is allowed to get out of time, resulting in long lengths. As the graduating attachment goes into action, about at the point of the first fashion mark link, depending of course upon the specification, the cylinder gradually begins to lower at each graduation. By the time the last graduation kick has been made the cylinder is at its lowermost position, knitting of course the ankle of the hose.

But what happens if the graduating attachment does not go into action at the first fashion mark link? When knitting the boot of the hose, just before reaching the graduating link of the chain, the boot adjustment is resting on the highest point of the egg-shaped cam attached to the graduating attachment. Then, as the graduating link reaches the pawl controller shoe to make the graduation kick, thereby starting the attachment in action to lower the cylinder, the kick is not made. The result is that the chain goes on just the same, the graduating attachment is not in action as a result of missing the graduating kick of the chain, the boot adjustment remains on the highest position on the egg-shaped cam of the attachment and remains this way until going into the heel. The result is the same stitch in the ankle as was meant for the boot, thereby lengthening out the stocking. As the stitch in the ankle is much tighter than in the boot, it can be plainly seen what the result will be.

As a remedy of this trouble, a check of the timing of the chain and attachment is necessary. Sometimes it is caused by a worn graduating chain link or the attachment itself getting out of time. I once found two machines running over a period of months in the condition described, causing much trouble in other departments, until the investigation was made.

Cylinders Must Work Freely

Third. The cylinders of course, as most everyone the insides of the cylinders, and proper tension on the knows, must work freely up and down in the gear ring to permit the lowering of the cylinder at each graduating kick. As there are fifty or more graduations of the cylinder during the tightening process from the boot to the ankle, it can be seen how important it is to have the cylinders work freely. Systematic oiling of needles, will assure a minimum of this trouble.

Control the Humidity

Fourth. One of the best assurances of even lengths is to have a proper controlled humidity condition in the knitting room, as many people are aware. In knitting rooms where no humidifying system is used, the change of atmospheric conditions due to the weather results in much unwanted trouble. Where machines are adjusted for one temperature, and damp or dry weather follows, the lengths are changed accordingly, due of course to the yarns being affected by the change. Humidifying systems of course do away with any annoyances of this kind.

Do You Allow Too Much?

Fifth. The writer believes that most mills allow too much variation as to lengths, in their knitting departments during the knitting process. Taking it for granted that stocking lengths cannot all be uniform in size at all times, due to the various conditions that prevent this, a closer standard as to the length allowances, in all parts of the stocking, plays a large part in keeping the sizes more uniform. I can recall a year ago we allowed one-half to one inch as to the boot length or over-all lengths of our hose. We decided to require a closer standard of knitting lengths from the knitting department, working up by quarters of an inch, instead of one-half and one-inch. We required our machinists to adjust their machines to this closer standard. The machinists at that time, I recall clearly, raised a big bally-hoo, saying it couldn't be done. They said it couldn't be done, because, looking at it from a machinist's viewpoint, he does not like to adjust his machines so closely, which also causes him more or less adjusting to keep the sizes uniform.

This objection was gradually overcome, however, by consistent work on the part of the inspection departments, working with the machinist who checks the machinists' adjustments after they have been made. This has worked out very satisfactorily, and we are contemplating now on allowances by the sixteenth of an inch, which we feel can be done. The purpose of this closer adjustment is only to get more uniform lengths and it helps.

Yarn Tensions

Sixth. The yarn tensions used on knitting machines play a large part in this trouble. The purpose of a yarn tension is to apply the desired tension to the yarns being used. If the discs of the tension do not fit properly, or if the springs are not set right, the yarn as it passes through the discs causes the discs to revolve unevenly, with the result that one part of the disc applies more tension than the other, which of course would cause a variation in the stitch. It is surprising, by a check of the tensions, to find how frequently these conditions exist. There are a large number of tensions available for this purpose, and a little experiment with them should prove profitable to many mills.

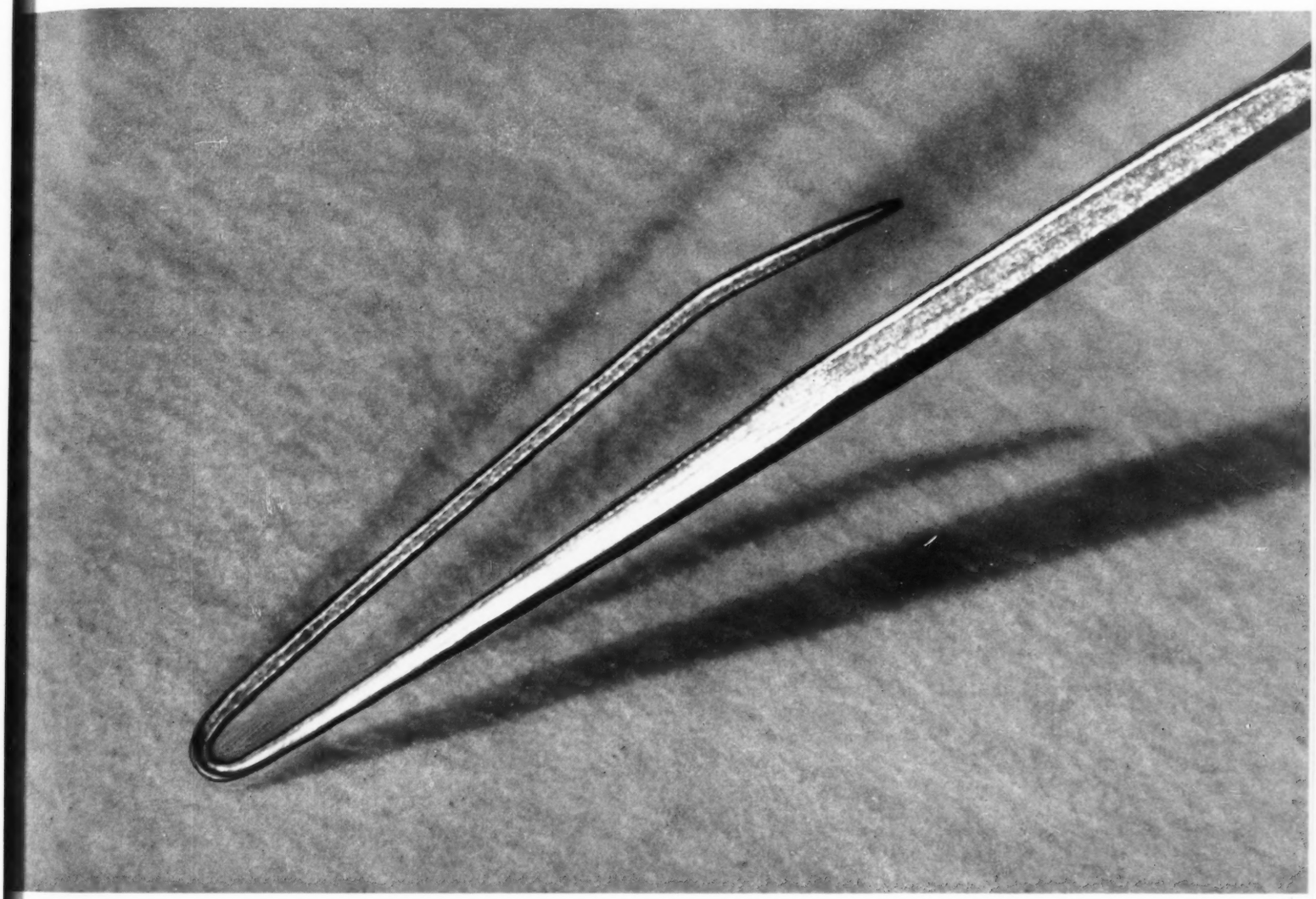
Left Side Cam

Seventh. The left side cam is another source of variation. Too much play between this side and the left side stitch cam results in much variation, especially so where there is more or less variation in the power speeds. The left side cam, being adjustable, forward and backward, should be pushed ahead towards the stitch cam as far as it will go until the needle butts scrape, then backed, out slightly to prevent this scraping, but at the same time allowing free passage of the needle butts. It can be seen that where there is too much play between these two cams, the overthrow of the needle butts is too great, resulting in uneven stitches.

Chain Pawl Riding Links

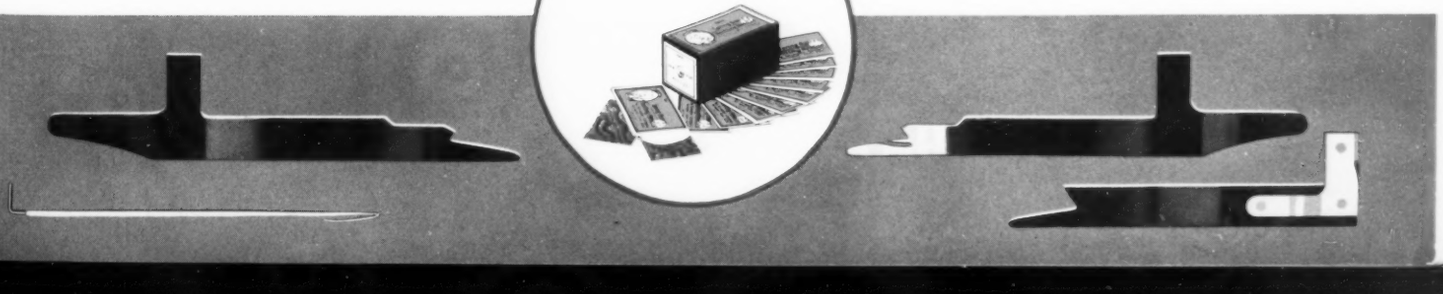
Eighth. Another unusual cause of long lengths I found to be due to the chain pawl riding the tops of certain changing links, that is, the links in the chain that make the various changes. As these links would pass by the point where the chain pawl was making its back and forth motion, every once in a while, due to the fact that the chain pawl was set too much to the left on the bracket, the pawl would ride the top of one or more of these changing links; the result being the chain stopped moving, but the machine of course kept going, which of course meant more courses of fabric. The pawl would ride in this position for one or more revolutions, and then slip off of the link again, resum-

uniform TAPER



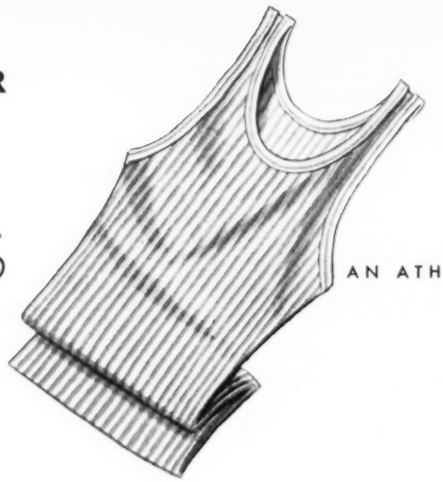
THE taper must be uniform in every full-fashioned needle so that the beards will close with uniform pressure and the stitches will slide evenly down the beards. Torrington has developed a *machine* method of insuring uniformity in taper—and every other factor that makes for knitting efficiency. "Machine-made" is behind the success of Torrington needles. It explains why they are right in every detail. Torrington sinkers, dividers and split dividers are also machine-made by the same extra accurate methods.

TORRINGTON *Needles and Sinkers*

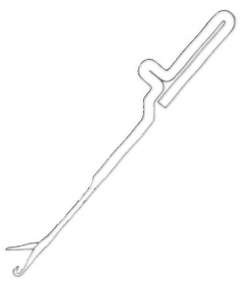


KNITTING JOBS THAT CALL FOR

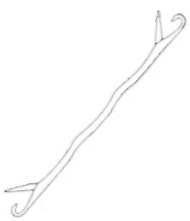
GOOD NEEDLES



AN ATHLETIC SHIRT



...SHORTS



...AND A PAIR OF RIBBED HOSE

The quality of staple lines is steadily increasing. Every year brings new standards. To knit better merchandise you need better needles. Torringtons are machine-made. They are stronger, tougher, more uniform. They help you keep quality up . . . costs down . . . and breakage trouble out. If you measure needle value by *service*, Torringtons will be your choice.

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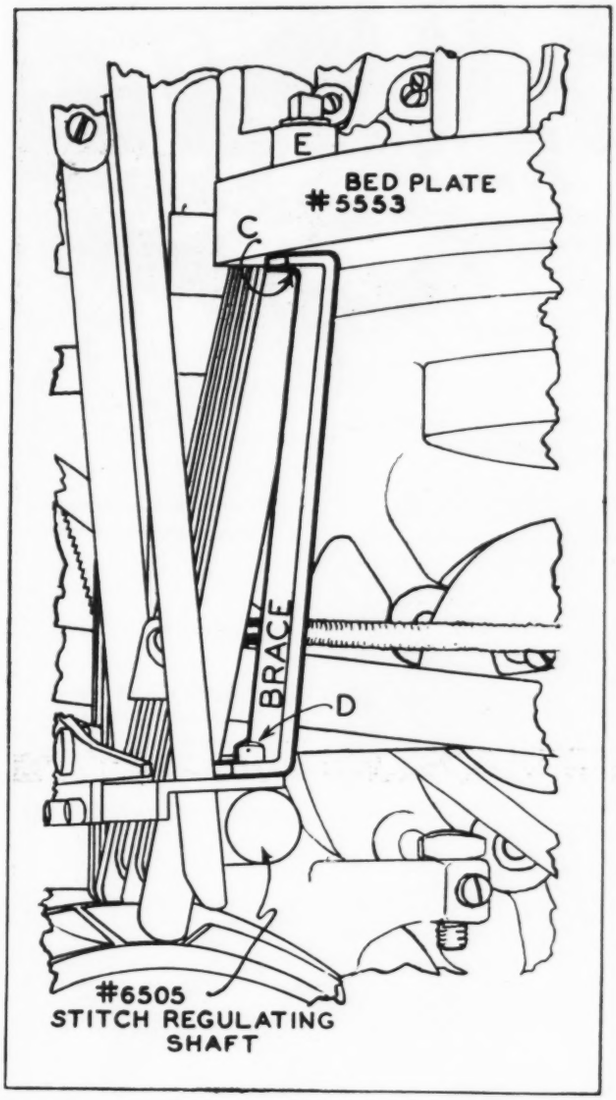
ing the regular rotation. This is something that does not occur very often, but is just one of those unusual



conditions that will arise. The remedy of course is to move the pawl more to the right or grind down the left side of the link.

A Helpful Kink

Ninth. The following kink is the one I referred to in the beginning of this article, for overcoming uneven lengths. As this kink has resulted in doing away with almost 75 per cent of our troubles as to uneven lengths, and is simple yet practical, I will describe it.

The stitch regulating lever (6042) can be the source of a great amount of variation in lengths. All who are familiar with the machine know that this regulating lever is held in place by the stitch regulating lever shaft (6505.) This shaft is held by one setscrew, which runs through the back frame of the machine to which the shaft is held. The regulating lever works freely on the shaft, and takes effect upon the drum cams, which in turn raise and lower the cylinder according to the drum lay-out as the drum revolves. Now the trouble is, this set-screw which holds the regulating shaft frequently is not enough to hold the shaft solidly. The result being that when the regulating lever has an effect upon the drum cams, instead of merely pivoting on the shaft, the lever has a tendency to raise the whole shaft, with the result that the height of the cylinder is not the same at all times, of course causing the variation.

The idea is to brace the outer end of the shaft so that it will be solid. By so doing the action of the regulating lever is made positive. This brace consists of one piece of flat iron, one-half inch wide, one-eighth inch thick, and long enough to reach from the screw *D* in the sketch, Fig. 1, to the bottom of screw *E*, which screw hole extends through to the bottom of the bed plate (5553) at *C*. It can be seen that a brace of this kind holds the shaft rigid, and is a sure solution for unnecessary variations.

CONTRIBUTOR No. 4794.

Prefers Consolidation of Departments in Knitting Mill

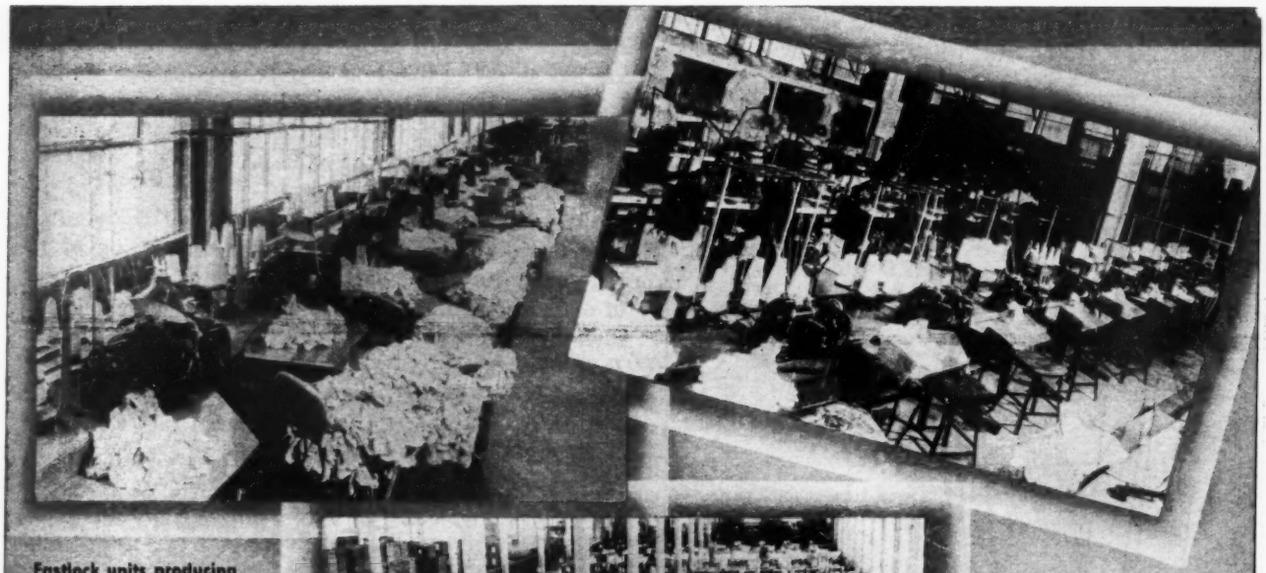
EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6567" who asks on page 123 of the September issue of COTTON whether it is advisable to consolidate departments of a hosiery mill where the ladies' hose are knit, looped, inspected, and mended in one department and the men's half-hose and children's anklets are knit, looped, inspected, and mended in an entirely different department, I wish to say that personally I prefer all the knitting to be performed in one department, all the looping in one department, all the inspecting in one department, and all the mending in one department.

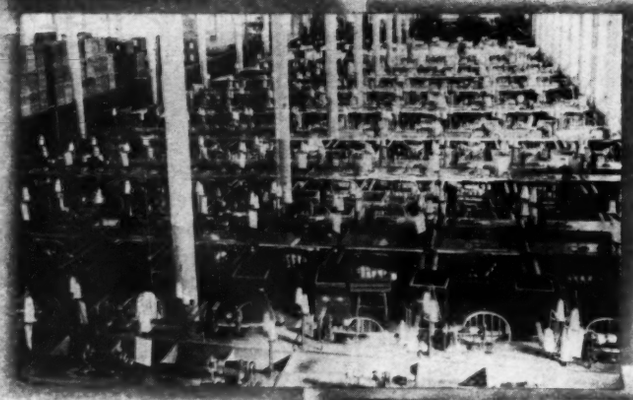
Under the present business conditions, having two departments for all of these operations would be a hindrance to me. For instance, we run so many styles and have to change so much that to trot back and forth between the two knitting departments would be a job in itself. The machines that are today making one type of hose may tomorrow be making another type. Say, for example, we have 200 machines in one room and 200 in another. If we have to change 50 of them, there is a possibility of our not being able to change all 50 in one place and then we would have that particular style being run in both rooms.

There was a time, shall we call it before election, that a mill could set up the styles and run the same styles all the time. Now we know of no such thing as a regular production chart. We just set the machines on the styles as the orders come and if I had to be running from one knitting room to another to keep track of them, I could find time for nothing else. I hate to think what it would be like if I also had two looping departments, two inspecting departments, and two mending departments.

Then too, suppose the looping department was in two separate units. Even if there was not enough work for both of them to run full time or with all the operatives working, I would have to keep a fixer or foreman in each department. This would entail considerable expense. If the departments were together, one man could adequately see that the work was prop-



Fastlock units producing knee length hosiery.



Fastlock units in leading knee length hosiery mill.

A typical Willcox & Gibbs Lockstitch machine installation.

Feldlock machines in broadcloth and silk pajama production.

Feldlock set up producing flannelet pajamas.

The preponderance of Willcox & Gibbs machines in representative plants is a marked token of Willcox & Gibbs supremacy. The views are of work rooms in plants of leading manufacturers of knee length hosiery, ladies underwear, flannelet, broadcloth and silk pajamas. May we have an opportunity of demonstrating how Willcox & Gibbs machines can serve you equally well.

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erly performed, thus making a saving here.

I do see how a large mill might keep the departments separate to some extent, and it probably would make the superintendent's job a little more cheerful at times, but I believe a consolidation would be better from a general point of view.

If both departments ran only part time, it would necessitate one regular fixer in one department taking care of part of the machines in another department to cut down on the cost. The fixers probably would not set the machines alike and then there would be more trouble.

With so much changing going on now, we do not keep our parts locked in a cabinet but have them in the open on a table so that the fixers may reach them with a minimum loss of time. If the knitting departments were in different rooms it would necessitate some of the fixers visiting one place, which would be trouble to them, to get the supplies.

As for me, I prefer to have the departments consolidated.

CONTRIBUTOR No. 6579

Points to Remember in Making Silk Hosiery

"The point I am driving at is that the mill should be putting up a cash reserve for double wear on its machines." And he gives his reasons for so stating.

EDITOR COTTON:

During a short course of years the hosiery manufacturers have added everything they could find to make a better and more beautiful stocking. However, now we are passing from the publicity standpoint of 3-carrier or ringless hose and we must bear in mind that they are here to stay and that we must consider the ringless feature another definite process in the making of hosiery. Of late, the spotlight has been focussed on "crepe" stockings, which are not entirely new, but which have been gaining in popularity over the hosiery counter, and I might add that the average woman insists now that she be shown a crepe stocking, appreciating its finer texture and its added snag resistance, and most of all, its dull appearance which stands out decidedly. There are several consumer advantages but there are also some manufacturing disadvantages which some of the mill men will not realize until it is shown in the cost later on.

In making crepe stockings, most of the mills are using an 80-turn silk and the throwsters must be relied upon to furnish the specifications in the yarn purchased that are called for by the mill. Silk that contains more than 20 turns per inch loses strength and elasticity, and as the twist increases beyond this point the yarn becomes shorter. The high twist or crepe yarns have a greater tendency to kink or creep and in order to alleviate this trouble, the manufacturer must use a reverse twist yarn, or in some cases, he can use a right turn in the welt yarn and a left turn in the body, or vice-versa. The trend to higher twist yarns requires a higher grade of silk to be used because the evenness of silk is an important factor.

When the high twist yarn of poor quality silk is used, it will be noticed that seconds will run from 5 per cent to 10 per cent higher in the finishing room; I mentioned before that high twist yarns have a greater tendency to kink, therefore, it must be realized that wastes from the same mill which previously ran lower twist yarn will run from 2 per cent to 5 per cent higher because while a knitter is replacing or tying a cone of silk on the machine, the yarn kinks or twists resulting in more yarn being stripped from the cone in order to tie a new knot.

The mill that is equipped with a humidifying system has the advantage over the mill that is not so equipped as when silk is knit in a moist atmosphere it becomes more pliable and its cutting power on the sinkers and dividers is less effective. A stocking loses its elasticity in proportion to the amount of twist in the yarn, therefore the mill that has been running its machines with 2 or 4 needles out of each side of the sinker head will find it necessary to use the width of the whole head in order to overcome or offset the amount of elasticity taken from the stocking when high twist yarn is used. On one make of machine I have found that when using a full head of sinkers, the draw cam and the draw cam rollers have to be in good shape because if they are worn it is extremely hard to get the right shock from the shock absorbers. When using the ringless attachment combined with crepe, the manufacturer having older machines will find it more expensive to make such hosiery inasmuch as any slightly worn part, such as sinkers, dividers, jacks, and bad needles, will show up in the stitch formation.

High twist yarns are hard on felts in the troughs and wear them so that they must be changed frequently, the result being more uneven lengths in the finishing room. Where metal tension rings are used the cutting power is even greater. The snappers are grooved more when high twist yarns are used, making it more profitable to employ porcelain covers on the snappers instead of cutting them with a file to secure a smooth surface; the porcelain covers are much cheaper in the end than buying new snappers. The carrier tubes also suffer from the high twist yarn. I advise that all carrier tubes that have to be replaced be beveled on the back side and then smoothed with a piece of emery card through the tube. The beveling gives a better selvage and it is an advantage on machines running high speed where catch bars jump; this saves the sinkers. I often have seen the transfer bars badly pitted, especially where a stocking is being knit tight, and in this case, the bars must be buffed more frequently.

During the knitting of the heel or splicing, high twist yarns are more stubborn and do not react to the sinkers and dividers, thus the sinkers have a tendency to retreat slightly, causing lines and in many cases, cuts in the fabric. More pressure can be applied to the jack springs to eliminate this trouble, so-called rebounding sinkers. On older machines it is advisable to run the machines at the highest possible satisfactory speed during this operation because where parts are worn and slur-cocks are not properly adjusted, knitting will be tighter when the machine is slowed down, thus producing a poor fabric union between the legger and footer which is more noticeable in

"You must lose a fly to catch a trout"

HERBERT

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using high twist yarns.

The reader will say, "Don't we have to give the public what it demands?" Yes! We do. But the point I am driving at is that the mill should be putting up a cash reserve for double wear on its machines. Think it over.

Reducing Bad Legs From Footer and Other Remarks

EDITOR COTTON:

Following is some information for "CONTRIBUTOR No. 6493," who, on page 143 of the May issue, would like to know how to reduce the percentage of bad legs coming from the footing machines, in making full-fashioned hosiery.

Let me first say that the problems presented are not very difficult ones to solve and should not be a source of trouble in even a fairly-well supervised mill. When mill owners once realize that adequate supervision is a vital part of any smooth-running organization, their minor difficulties, such as those presented by CONTRIBUTOR No. 6493," will disappear. So, on to the problems.

Here are some methods of preventing breaking out at the topping point in the high splicing:

1. If the splicing rockers on the legging machines are not adjusted properly, this will cause breaking out at the corners. These rockers should be set so that they do not release too soon on the inside of the high splicing. By releasing too soon, the stitches along the inside of the splicing remain tight and when the leg is topped and transferred onto the footing machine, said stitches will not stand the strain and therefore, break open. *It is very important that these rockers be adjusted properly.*

2. If the stockings in question are re-inforced with silk, have the topper wet the stockings with some silk solution after they have been transferred onto the topping bars. This will soften the heavy silk used to re-inforce the splicing and the stitches will stand a great deal more pressure. But if the stockings are re-inforced with mercerized cotton, *do not wet the stockings on the topping bars* as any wetting process has a tendency to tighten material made from cotton. Therefore, wetting these stockings would tighten the high splicing and cause more breaking out than before.

3. Be sure that the toppers are raveling out *all* of the extra threads in the topping corner. By failing to ravel out even one extra thread in the corner. many break-outs will occur. Toppers are prone to forget about raveling out the last extra thread because it takes a little more time to do so. Any extra threads in the topping corner put more pressure on the stocking when it is transferred onto the footing machine and corners are bound to break out.

4. Toppers and footers are likely to become careless about the amount of bad legs unless a constant check is maintained. Each topper should be made to tie up his bad legs every day and place a name ticket upon them. This will enable the management to determine just who is making any large amount of bad legs. The mere fact that the operators know they are being checked on, will automatically reduce the amount of bad legs. A lot of this trouble is due to thoughtlessness and carelessness and it is something that must be controlled by persistent supervision.

5. Points in the topping stands should be renewed periodically as these points become pitted and roughened from constant usage. Oft-times, the gum, coming from the silk, hardens on the stand and bar points and leaves a rough, hardened gum-line. Try polishing the points on a buffing wheel and if this doesn't help, place new points at the point where the cutting occurs.

6. Nothing is said in regard to the construction of the stocking but I will say that if it is of a tight construction, and the cutting is occurring during the transferring of the stockings onto the footing machine, then other methods than those already mentioned will have to be resorted to. If only one or two footers are giving trouble it may be that the transfer brackets are improperly aligned. But if all of the footers are giving trouble this is not likely to be the case.

If it is an extra tight stocking, then something must be done to relieve the pressure on the topping bars when the transferring onto the footer takes place. The bearing ends of the transfer bars could be slightly rounded on the front and bottom edge. This will give an easy rolling movement to the bars in the guide bracket bearing during the transferring operation and the loops will slide off with less pressure.

A series of elevating screws could be placed on the needle bars directly beneath the transfer-bracket arms and these screws so timed that they would start lifting the transfer immediately after the needle has been far enough advanced to engage the stitch below the beard. This method lifts the transfer bars out of action by the guide bracket rather than by the upward movement of the needles, which is the standard method. Nothing of this nature however, should be tried until all other methods of correcting the trouble have failed. (In the event that the contributor wishes to try this method, I will be glad to forward him full particulars in regards to same.)

7. Then there is always the possibility that the silk-soaking oil is reacting on the points and needles and causing the fabric to stick during the transfer operation. Silk that is too harsh will break out during transferring and though the silk runs moist during the knitting process, and appears soft and most, this does not guarantee that it will not be harsh when dried and that it will not slide freely on the points and needles. This is a matter to be taken up with the throwster.

8. The four-needle topping corner block is being used by most mills and is no reason why the stockings should break out to any marked degree.

9. It is claimed that the stockings in question are breaking out the first course after transferring onto the footing machine but it is often found, upon close investigation that the stitches have been par-

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ROYERSFORD NEEDLES

tially broken during the topping process, and then break altogether during the transferring operation. It would be well to check on this.

(This is rather a lengthy discussion but the "CONTRIBUTOR No. 6493" did not state very clearly some important points which would have helped a great deal in shortening the answer, namely: gauge of machines, weight silk being used, courses to the inch, type of machine, and just what he had done to eliminate the trouble.)

In regard to the ends breaking on the first course of the footing operation, I can only say that this is a matter of carelessness on the part of the operators. If these ends are properly laid in under the transfer rack while the operators are putting a set on the footer, this cannot occur.

In the event that a very high twist silk is being used, the ends might have a tendency to curl up when the set is started. This can be eliminated by placing small endfasteners on the table of the footing machine and then have the operators fasten the ends while they are dropping in the bars. I venture to say that the footers in the mill with which I am at present connected have no more than two or three press-offs of this nature in a week's time—and then only due to carelessness on the part of the operator not fastening the ends.

CONTRIBUTOR No. 6527

"Waste Makes Want"

Some ideas on controlling waste in a knitting mill

EDITOR COTTON:

At this time, the problem of manufacturing just what the public and the dealer want is more important than ever before. To make goods at a price and of quality that are presentable is one of the main issues. Let us look at the cost of manufacture and see how we are able to make the goods at the right price and still afford ourselves a nominal profit.

We must curtail waste and all unnecessary machine replacements that are a constant drain on profits. To do this, we must have constant supervision of each department.

A great expense in hosiery knitting is needles. I have seen fixers remove as many as three or four needles at a time from a machine so as to make certain that one bad needle was replaced. This is an unnecessary drain on profits and if this is practiced in a knitting room, it should be stopped. By having the old needles returned to the person that issues supplies, a good bit of the waste here may be ended. The supply man should not issue new needles unless the fixer returns needles that really need to be replaced. If a record is kept of the number of needles issued, the overseer will know which fixer is using more than his share. Then the work may be checked to see why there are so many more used. If there is a cause for excessive needle usage, it can usually be stopped.

It is well to inspect occasionally to see that the operators are running all the yarn from the cones or bobbins and are not removing them before they are depleted.

In cleaning machines, some operators grab the first piece of fabric they get their hands on and probably this same piece could be back-wound and used again. A method of keeping fabric that may be back-wound from being used as a cleaning rag is to sort the pieces of goods that cannot be back-wound and have them dyed brown or black, and make the operators understand that only these pieces are to be used in cleaning. I suggest using an exhaust dye on these pieces. Also the pieces may be washed and used again. This will amount to quite a saving in the long run.

In oiling machines, a great amount of oil is wasted by operators that do not know what the purpose of oil is and what it costs, and subsequently oil is put where it does more harm than good. The fixer or some special oiler should do this work and he should be made to realize his responsibility.

In counting the stockings, some operators are careless and some intentionally do not have 24 stockings to the dozen pair. I have checked on this and have found from 20 to 22 stockings where there should have been 24. By checking the hose from time to time when the operator least expects it, much of this short count may be eliminated. If this is not being watched in the mill, there is a good chance that the company is paying for something that it is not getting.

Often it is found that an order has been overfilled, that is, that more hose have been knit of a certain style than can be sold. It is well for the overseer to have a record of what has been processed so that this loss may be eliminated. A card should be given to the knitter that tells her just what she is to do, and she should be made to follow this order. Each day she should deduct from her order the amount that she knits and in this way, she can notify the fixer when the machine is to be changed over before she knits several dozen that cannot be sold. By doing this, there is no danger of any surplus stock being made. It's the filled orders that pay and the unfilled orders mean an inventory that holds money where it cannot be used.

In the long run, it is not the orders we book that determine our profit, but the cost of the goods that we make. Thus the waste in a mill may bring a close margin of profit down into the red.

The help should be educated along the line of waste and then they should be watched to see that they practice what they are taught. It is not a bad idea to take the foreman into confidence and show him just what is lost from waste, etc.

Thus, I say, what we save depends on constant supervision. There is an old saying, "Waste makes want".

CONTRIBUTOR No. 6544

Sometimes a burr on the nose of a plain sinker will cause tuck stitches.

If a check-up is kept on seconds, it is a simple matter to determine just where the trouble lies.

Thirty-Third Annual

Knitting Arts Exhibition

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THE KNIT GOODS MARKETS . .

New Business In Knit Goods Smaller But Mills Active On Old Orders. Prices of Hosiery Unchanged But Additional Increases Made In Underwear

Philadelphia, February 16, 1937

SINCE the middle of last month new business in knit goods has shown tendency to diminish but manufacturers are generally active getting out the large volume placed with them during recent months. Higher prices for these lines are meeting with more resistance but these are steady to firm so that the trade generally looks upon this slowing down in new orders as a natural development in view of the heavy forward contracting that was done previously. Many foresee new governmental action on wages and hours which will have the tendency of keeping goods prices steady over coming months, while on the other hand retail sales of knit goods are averaging higher than a year ago except for the flood areas, many sections running 10 per cent higher so far this year than last.

Higher Mill Prices to Be Tested by Consumer Shortly

Although some lines of knit goods such as full-fashioned hosiery are already on retail counters at price advances due to recent increases by manufacturers most lines must be tested yet in this connection.

New business in most lines has been considerably less active since the first of the year with the most marked decline in orders occurring since the middle of last month and part of this may be due to the completion of lower price orders and the filtering down into retail channels of some of the higher prices named in recent weeks by manufacturers. The latter believe that a short period may be seen now in which new business arrives less actively while the higher prices put into effect by manufacturers over recent months are assimilated. In this connection, both manufacturers and hosiery jobbers report that while chain stores dislike to disturb their fixed retail price brackets, most of them are now convinced that this will be necessary and in line with this a number of hosiery manufacturers in this section making children's and infants' lines report contracts from the chains at price advances of 5 to 7 per cent.

Business in women's branded full-fashioned hosiery during the last month has been less active following the tremendous holiday trade of last December. Continued unseasonable weather in the East and drastic flood conditions in the Middle West, together with the unwillingness of some retail buyers to take on additional goods at the latest prices have brought about the traditional decline in activity during the first few weeks of the year. Buyers, although admitting that current prices are justified are not going out of their way to take goods but manufacturers say conditions that forced prices up to the $6.33 basic level and which indicate another rise is not far off have not changed. Branded houses are looking forward later this month as a starting point for a smart pick-up in volume as they believe that year-end stocks will have been cleared out and calls will then be made for shipments of new merchandise. Replacement orders from flooded sections of the Ohio River and Mississippi River Valleys are expected.

Current Prices Not to Remain

Practically all the better stores are now asking 85 cents per pair for basic numbers, although here and there some retailers still are holding to 79 cents. The latter placed orders prior to the branded advance of January 1 and say that they cannot ask their customers for the increase just yet. Eventually, however, these stores either will have to move up their retail price or switch to other lines of branded or unbranded goods. At the present time there is no indication that current prices will not stay where they are. Large distributors are not loading up with $6.35 merchandise as yet. While most agree that the rise was justified, they wish to get more of a reaction from their own trade before placing larger orders with the manufacturers at the new level. At present they are contenting themselves with fill-in orders and some few houses report current deliveries rather slow.

In view of the fact that unbranded full-fashioned hosiery also has moved up in price, branded manufacturers express little concern over the possibility that any great swing away from branded goods will result from the new prices, at least in the better stores that feature these goods. One of the reactions to retail demand in the eastern section of the country during recent weeks is the large stock of dark colors on hand. Branded firms say that the buying of the lighter shades this winter has been almost unprecedented and that some stores now find themselves with an accumulation of the darker shades.

The market on 4-thread, 42-gauge unbranded ringless full-fashioned stockings of good construction continues at $5.50 to $5.75 with most of the better known mills reported firm at the higher level. Buyers are studying the raw silk situation at present because they expect if easiness in the raw market continues and the less active demand for goods from manufacturers continues, the latter will have a job on their hands to maintain the latest prices on full-fashioned lines. Although silk has declined moderately from its January level, manufacturers point out that this has not been important enough to justify any reconsideration of prices, particularly in view of their assertion that their margins were insufficient a month ago.

Warm weather during recent weeks has had an unfavorable influence on the movement of seasonable lines of hosiery, both with manufacturers and jobbers. The latter say that business during the last four weeks has registered a smaller increase compared with the same time last year than for several months past. Offsetting this to some degree deliveries on old contracts are being made in larger amounts than at this time a year ago. There are reports that parts of the country on account of the mild winter have not sold wool hosiery numbers, especially the heavy bundle stocks, as freely as expected. Wholesalers in many localities are carrying over sizable inventories of heavy wool goods and this is having some effect on their attitude toward the spring lines.

Some lines of cheaper wool goods have been advanced since the opening. The 25 cent retailers, for example, that were first offered at $1.50 a dozen have been advanced 5 cents and then 2½ cents, bringing the quotation now to $1.57½. In the men's seamless hosiery numbers for spring, like those retailing from 15 cents and upwards, volume is satisfactory. The advances of 2½ to 5 cents a dozen on numbers like the 220-needle goods are well established. Distributors are showing a good interest in men's half-hose with an elastic top eliminating the wearing of garters and a large volume of business is expected in merchandise of this type during the spring months. At the same time knitters of men's slacks, in reality an anklet for men, are predicting a record volume in such lines for the retail spring season. Retailers say the consumer trend towards such freedom in wearing apparel is very marked at present and most of them are preparing to do a very large volume in these men's slacks, many of which have an elastic top as well as in the regular length half-hose, with the knitted-in garter effect.

Anklets Sold Ahead

Manufacturers of anklets are actively engaged in producing numbers for the coming season, and most of them are well sold ahead. The 1937 retail season in anklets for children and adults is expected to reach a new peak for this line of goods and outstrip the exceptionally large production of these numbers during 1936. Mercerized yarns play a very important part in the anklets for this spring with pastel shades being numerous with manufacturers. Mill representatives say that in many cases so much has been taken out of hosiery priced to

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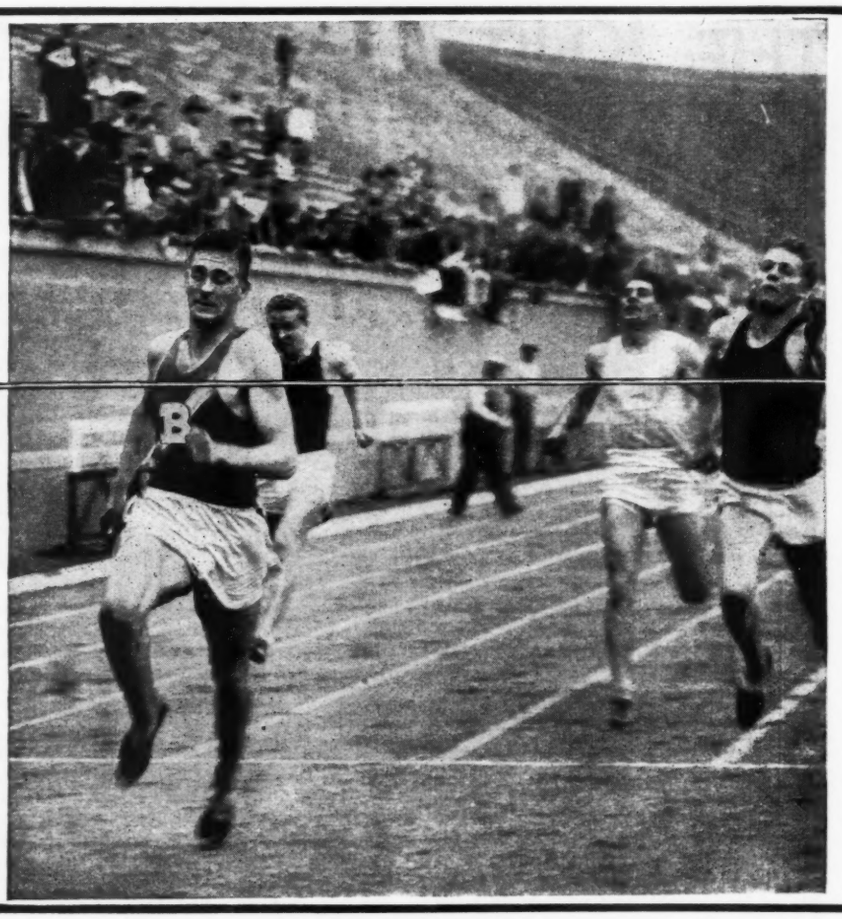

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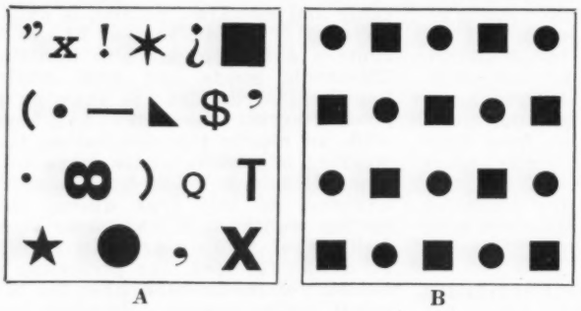

A B

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retail at 10 cents a pair in the chain stores that further construction changes along this line are practically impossible. If manufacturers meet further increases in cost, such as higher wages, it will be impossible for them to turn out numbers such as anklets to retail for 10 cents and this will meas that the chains will either have to discontinue such lines or change their price tags.

Knee-length stockings for women, which last year were a seasonable number, selling mainly in warm weather, have become a year-around item with hosiery jobbers, who say business in them has been good all winter. When warm weather comes they expect selling records to top those high levels of 1936. There has been a good demand this month for rayon seamless knee-length to retail at 25 cents a pair and 50-cent or 69-cent for silk numbers. While a good volume is considered sure for the spring and summer in this length stocking, some apprehension is being expressed by certain jobbers regarding the shortening of skirts, which might mean that fewer knee-length stockings would be worn than when the style called for longer skirts. It is expected, however, that the trend toward shorter skirts and the dressing of women's footwear this spring by showing more color and detail in shoes will result in a rising wave of interest in novelty effects in women's full-fashioned hosiery.

A number of branded houses are giving greater attention to this and their spring numbers include more colored heels, meshes and novelty clocks than they did last year. The absence of any real winter weather in this section of the country so far has resulted in greater selling of full-fashioned hosiery colors leaning to the lighter side than has been the case for a number of years past. It is becoming increasingly apparent that women are reluctant to wear dark shades in winter unless snow and slush make their use imperative. Some women go through the entire year with little change in their choice of colors as far as wide swings are concerned but more than everare wearing the lighter shades when the weather and their costumes will permit it. Department stores here and in New York during recent weeks have been featuring 4-thread, 45-gauge chiffons in warm coppery shades and smart neutrals while others promoted sunbronze for wear with brown and high shades.

In the country's use of hosiery of all kinds during the last year, the highest-priced item, that of women's full-fashioned silk stockings, made up the largest percentage. The total shipments of all kinds of hosiery were 122,700,000 dozens and the full-fashioned hosiery constituted 37,401,000 dozens. The gain in this kind of hosiery over 1935 was 9 per cent, indicating the more prosperous condition of the country. For the first time since 1928 this section of the hosiery industry will operate approximately at capacity this year, according to manufacturers, who predict that the 1937 output will reach a record total of around 42,000,000 dozen pairs. No let-up in production has been apparent since the first of the year. January shipments, unlike those of a year ago, were so well sustained with two of the larger companies that they reported gains of 77 and 60 per cent respectively. While both are exceptional there are record increases noted among other concerns and an optimism in full-fashioned circles that has long been absent.

New Policy by American Federation

Philadelphia. Sectional or district agreements with manufacturers were decided upon at the annual convention of the American Federation of Hosiery Workers at Washington instead of a uniform national agreement. The new policy by the union was decided upon because, "Conditions in the industry are changing rapidly and the technique of dealing with the employers must change also so as to give greater efficiency and more speed in negotiating and writing contracts", President Emil Rieve declared. He also said that wage increases might be in order in some sections of the industry and stated that he believes conditions warrant certain advances in rates to employees at this time. The last national agreement between union full-fashioned hosiery manufacturers and the union was allowed to terminate late last year by the manufacturers' association and the union by mutual agreement when the union, after a national ballot, refused to arbitrate certain demands of the manufacturers. A greatly intensified organization drive throughout the country with particular attention paid to the South also was determined upon.

Capacity Operations for Spring

At this rate it appears that the 15,000 odd machines of the industry will be heavily taxed to keep abreast with orders most of this year. Manufacturers have been warned against building up heavy stocks, especially in the off months of the year but indications now are that the spring season can definitely stand two months of capacity operations. What the summer will bring cannot be foreseen yet but sentiment in the trade is that with the shipping and automobile strikes out of the way no serious lull is to be expected. Some mention in this connection another factor for full-time production at present, that the hosiery union has been trying to rally its forces and at the conclusion of their Washington convention it appeared that they had consolidated their position somewhat and would follow the advice of the head of the union to press for increases in wages in certain sections of the market.

Hearing on the application of domestic hosiery manufacturers through the National Association of Hosiery Manufacturers for a higher tariff on cotton seamless hosiery from Japan was held before the United States Tariff Commission in Washington. The case presented in behalf of the domestic industry was a strong one. Imports of Japanese hosiery classed as cotton but including considerable cotton and rayon merchandise increased from 270,813 dozen pairs in 1934 to over 2,000,000 dozen pairs in 1936. These imports are chiefly half-hose, children's and infants' goods, and the average price of the import last year was approximately 30 cents a dozen, making possible their sale at retail at prices which the domestic industry cannot touch.

These rapidly growing imports have created a serious problem for American manufacturers of these numbers and if they continue to expand at the rate of the last few years, they will seriously menace the existence of many American mills. Questions of national policy as well as the interest of the domestic industry must enter into consideration of any recommendation of the Tariff Commission on this matter. The domestic industry hopes that the decision will be favorable to a considerable measure of protection for it. Many manufacturers do not believe that the problem is solved by an agreement of Japanese exporting interests with the support of their government to restrict exports of hosiery from that country to the United States to 2,000,000 pairs a year because they feel this would in effect "freeze" the annual import of Japanese hosiery of this type at the peak level which was attained after two years of rapid growth.

Final figures of the Department of Commerce on imports last year of Japanese cotton hosiery show a sharp decline in the average value of Japanese imports of this merchandise compared with 1935. The National Association of Hosiery Manufacturers finds that in 1935 the average value of such imports was 35 cents a dozen while last year this had declined to 31 cents. These values are, of course, before charges like tariff duty, etc. The final year's figures show that hosiery imports for Japan amounted to 2,148,000 dozens compared with 651,000 dozens in 1935. The association estimates that imports of cotton hosiery for the year from Japan comprised almost 22 per cent of the production of comparable hosiery in the United States, whereas in the year before this figure was only 7 per cent.

Japanese Promotion Fund

A fund to be used primarily for the promotion of the sale of raw silk and silk goods will be financed by means of an export levy of five yen a bale on all raw silk exported from Japan on and after January 1, 1937. On the basis of this country's consumption of Japanese silk last year, 420,883 bales, the total amount raised for this fund in the United States in 1937 at the current rate of exchange will be approximately $610,000, of which the hosiery industry will contribute over 65 per cent. In view of this, interests identified with the hosiery industry feel that a major portion of a promotion fund of this character, coming from hosiery should give these manufacturers a voice in the expenditure of the money.

Meyer President FF Hosiery Association

William Meyer, Apex Hosiery Company, was elected president of the Full-Fashioned Hosiery Association, Inc., at the meeting of the directors on December 21, succeeding J. C. J. Strahan.

Underwear Mills Operating at Top Speed But New Orders Less Numerous

Underwear mills are now running in many instances more actively than ever before in their history. They are turning out more merchandise and giving employment to a larger number of workers than at any time. With the business now on their books, this situation, unless something unforeseen happens, will continue, manufacturers expect, through the year. While busy on spring numbers those mills making women's knitted cotton or cotton and wool mixed garments are finding that the fall buying on the part of many wholesalers has slowed down recently. The expectation was that after wholesalers had completed their buying of staple men's underwear numbers for fall they would turn to the women's goods and finish this part of their contracting. There has been a good volume of women's business already booked but it has been mainly from the chains or mail order houses and the larger wholesalers. For the average size and smaller wholesaler, much of this type business is to be placed.

Advancing prices are compelling retailers to revamp old price ranges to the consumer. Underwear manufacturers selling direct to retailers are marking up their product as they are forced to do so by higher production costs but they are doing so in easy stages instead of all at one time. They are warning retail distributors that old resale figures to which the public has become accustomed must gradually be displaced by higher ones. This is being accomplished and men's underwear garments that have sold for some time at three for a dollar will have to be marked up to a straight 39 cents apiece. Likewise the 50-cent retailers will have to be marked up to 55 cents or 59 cents, if the retailer is expected to have his normal mark-up. The manufacturer is not only paying higher prices than a few months back for raw materials but also is now operating under new taxes of various kinds. The prospect also of new government control of wages and hours is in the minds of the industry.

The let-down in underwear buying noted early in February following the extreme activity of January is being felt mainly in the women's end of the business. Salesmen on the road find that the latter are inclined to go slowly and the explanation is that these buyers expended all of their enthusiasm in buying men's numbers for next season and now are inclined to go more cautiously on further purchases. A considerable volume of women's fall business has been placed in certain sections of the market in leading items like snuggies, the cotton and rayons, and the part-wools. The chains and mail order houses are understood to be practically through. This part of next fall operating and some of the larger wholesalers also are believed to have completed their plans in this merchandise. But many of the average size and smaller wholesalers have yet to place the bulk of their fall women's business.

In the men's end of the business mills making cotton ribbed, the cotton fleeces and wool numbers are viewing the future with great confidence. The volume of business on their books is in many instances much larger than a year ago and of course much earlier. These buyers operated on the theory that prospects for the fall season were favorable and with the idea that to get in orders early was the thing to do since new Federal legislation that would cut down mill production and raise costs was probable. They feel that if they can get the bulk of their orders made up by mills before this occurs, raising manufacturing prices, they will be that much better off.

Several of the large southern mills making men's and boys' cotton ribbed numbers withdrew their fall lines early in February, having booked their production and at market prices. Outside of two or three mills making ribbed goods, usually classed in the lower quality range, this part of the next season's market is well taken care of. Several of the latter mills have been continuing to accept orders on a basis of $6.12½ for the men's 12-pound suit. In the higher quality brackets, several northern mills are also about ready to withdraw their fall lines. These mills have a large amount of fall business booked, enough probably to run them at least to October.

Events in Washington, notably the President's move regarding the Supreme Court, have been regarded as portending eventually larger control of industry of all kinds. This would mean only one thing in the minds of knit goods manufacturers, action on wages, hours and probably trade practices. Such being the case buyers are more convinced of their judgment in getting fall orders in early with mills. The immediate situation in spring underwear of all kinds of strong, mills being busy and in many instances buyers are asking mills to anticipate delivery dates originally given. Such requests for anticipation are usually the mark of a good season because the wholesaler moves forward his deliveries because he finds the retailer is also anxious to get in the merchandise. The mild winter in a large part of the country has been a factor in starting these requests for light underwear but the favorable prospect for business in the future has been the larger influence.

Manufacturers in the Utica, New York, section, have held several meetings this month with their employees with the outlook for an amicable settlement of matters under discussion. Large underwear mills in that district all made a voluntary wage increase of 5 per cent on January 1 and it was arranged that another 5 per cent would go in effect on March 1, meaning that by the beginning of next month employees of the mills in Utica will be getting 10 per cent over their wages of last year. The agreement reached was also said to cover a 40-hour week for the year, except during two periods in the spring and fall when these mills are usually exceptionally busy. At those times a 45-hour week would be observed.

Sharp criticism of the procedure employed by the Secretary of Labor in determining wage scales for industries bidding on Federal contracts under the Walsh-Healey Act developed at a public hearing in Washington attended by underwear manufacturers. Led by Roy A. Cheney, managing director of the Underwear Institute, members of the industry appeared before The Public Contracts Board of the Labor Department to submit their views with respect to a minimum wage level for the trade. The Institute brief filed by Mr. Cheney questioned the order of Secretary of Labor Perkins, establishing a wage minimum for the men's work clothing industry and cautioned the board against filing a similar course in prescribing the wage level for underwear workers.

Conceding that his organization represents only approximately 20 per cent of the industry by volume, Mr. Cheney nevertheless said members as well as non-members have had the opportunity to register their views with respect to a universal minimum wage for those plants supplying Federal needs. He recommended that the secretary promulgate the identical minimum wages established for the industry under NRA and maintained by institute members: an hourly wage minimum of 30 cents and a weekly minimum of $12.00 for a 40-hour week in the states designated as southern by the NRA and an hourly minimum of 32½ cents and a weekly minimum of $13.00 for a 40-hour week in the northern area.

The underwear industry experienced the greatest volume of production in its history during 1936. All lines shared in this large volume of business but the principal gains were by the knit cotton-wool and secondly by the woven athletic un-

Synopsis of Hosiery Meeting

Philadelphia. "Reasonable" Federally-enforced legislation to regulate hours, wages and fair trade practices was agreed to by the hosiery industry at a general conference held February 11 and 12th in New York under the auspices of the National Association of Hosiery Manufacturers. Earl Constantine, managing director, said that in any such legislation for the textile industries, each branch should be permitted to draft its own regulations, subject to government approval, adding that legislation dealing with fair trade practices should be separated from that dealing with hours, wages and working conditions. Other actions and declarations by the conference were announced by Constantine as follows: In favor of classified occupational minimum wage provisions and against a single basic minimum governing all wage operations; in favor of continuance of the five-day week adopted in a recent code; in favor of flexibility of finishing operations to permit them to be extended to not more than ten hours per day within the period from Mondays to Fridays inclusive for a maximum ten weeks in each half year, excess hours to be offset in the same half year and in favor of continuance of the 40-hour week but opposed to a week of less than 40 hours, developed the "fact" that hosiery prices are "lagging" behind those of related products.

derwear mills. More moderate advances were recorded by the circular knit rayon-silk branch and the warp-knit rayon-silk underwear. It is believed total output last year approximated 45,000,000 dozens, of which knit cotton-wool underwear will constitute better than one-half and the circular knit rayon-silk and woven athletic underwear each approximately one-quarter. Stocks of underwear recorded a moderate increase from the end of 1935 to the end of 1936. Roy A. Cheney has reminded the trade that the average consumption of underwear in the United States from 1927 through 1935 was more or less on the under side of 40,000,000 dozens. In view of this, the jump last year to around 45,000,000 dozens must be examined. He emphasized that average underwear prices in 1936 were 5 per cent less than in 1935, contrasted with practically no change in the wholesale price index for all textiles and a slight increase in the index for all commodities.

Cheaper cotton outerwear numbers still remaining in the dollar range like the cotton fleeced and ribbed coats are selling actively for next fall. Prices on many of these have been advanced so that they are close to the dollar resale limit, but so long as they do not go over the extreme limit, wholesalers are buying them with confidence. A number of mills are now well sold on such numbers of next season and some of them have gone about as far as they want to go in selling up their production. They feel that some margin of production should be held in reserve against possible price increases later on. Mills making different qualities of sweat shirts also have found buyers ready to place business through much of the year. Not only the cheaper qualities of sweat shirts have been selling freely, but also the better numbers.

H. W. Anderson Comments. Recommends Increasing Research

Philadelphia—In looking forward to developments to come in the seamless hosiery industry the trend toward greater comfort in wearing apparel, particularly in warm weather, gives indication of still greater expansion in knee-length hosiery for women, in short socks for men and anklets for children, according to H. W. Anderson, president of the Fidelity Machine Works, Philadelphia, and one of the leading authorities in the knitting industry.

In this connection, he said in men's lines the use of Lastex distributed throughout the tops and the perfection of machinery to accomplish this have gone hand in hand but in no new constructions has comfort been sacrificed for style. The two have advanced together in recent months. Mr. Anderson said: "In the ever increasing volume of children's anklets it is possible that a new high point will be reached this spring in the type of anklet made on one machine and involving the use of Lastex construction in which the holding or supporting power depends upon the indentation of the rubber in the skin."

"This type of construction has made for very great economies in production and subsequent large volume. In men's half-hose the true rib construction continues in favor in tops but with the use of a construction involving the introduction of Lastex under controlled tension and multiple feeds. In the leg the construction known as the English rib promises great stability and important expansion."

Although retail chains with fixed price brackets are fighting against increases in prices by manufacturers due to higher commodity, labor and other overhead charges, Mr. Anderson said the present year will prove whether they will be able to hold this position or whether manufacturers will make further progress in merchandising so that they will be able to report as good a showing in this respect as the large chain organizations do. "It would seem with all other conditions in life subject to change that the law of supply and demand, as well as the requirements of the consumer for better merchandise, might prove more of a determining factor than over-emphasis and concentration upon fixed price brackets," he declared.

"As a matter of fact these brackets came into existence when manufacturers did not expect to make a profit and when distributors alone considered profits the most esssential element of their operations. It would seem that whether present price brackets are to stand remains largely in the hands of manufacturers and is not a responsibility that can now be placed upon buyers. When manufacturers acquire the same ability to rate their success in terms of profit as the buyers, then at that time we may see a change."

Mr. Anderson said that assuming all of the indications are correct in respect to a forward business cycle for some years to come then this should be a period in which the properly functioning organization can be assumed to operate on a profitable basis but he emphasized that it also should take this opportunity to build for the time to come when business may not be so active. He recommends increasing research so that the manufacturer can have new products to offer to offset any drop in the future in volume.

Everything points to a further expansion over the very large rate of recent years in consumption of rayon and synthetic yarns and materials, he declared, adding that in women's full-fashioned lines there are "great rewards waiting for the manufacturer that can use rayon more successfully which should come about through close co-operation of rayon producers with hosiery manufacturers so that all of the qualities of importance now embodied in silk hosiery will also be included in rayon."

Commenting on the single unit full-fashioned knitting machine he said progress in the United States along these lines had been slower than in other countries but believes that much progress will be seen here in the next few years.

At present there is a narrower margin between the productive capacity of the hosiery industry and consumer requirements than any time in recent years and Mr. Anderson said the number of new mills being planned and those already started indicate interesting possibilities now for manufacturers of knitting equipment.

Leaflet by Fostoria

The Fostoria Pressed Steel Corporation, Fostoria, Ohio, has released a leaflet showing the short-coupled Fostoria machine lamps for installation where space is limited. These lights are said to be most suitable and efficient where the attachment for the lights is only a limited space. Two Fostoria lamps are illustrated: they are No. 12 and No. 12C. Both units are attached to a stamped base with two 11/32-inch holes for mounting, spaced two inches center to center, and are assembled to a short tube, three inches from base plate to center of the ball socket. These units are assembled complete with key socket.

Condit Electrical Manufacturing Corporation Now Operated as Unit

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., announced that its subsidiary company, Condit Electrical Manufacturing Corporation, Boston, Mass., is now operated as a company unit. This was effective January 1, 1937. The company is now known as Allis-Chalmers Manufacturing Company—Condit Works.

Patent Infringement Suit Results

Philadelphia. Hearing of evidence in the patent-infringement suit of Julius Kayser & Co. and the Textile Patents Corporation against Rosedale Knitting Company in the so-called ringless trial ended February 2 before Judge Oliver B. Dickinson, in the United States District Court here. March 22 was set for the filing of main briefs in the case, April 5 for replies and final arguments of council will be heard on April 9. March 1, 2 and 3 were agreed upon as dates for the trial of Rosedale's countersuit alleging violation of the anti-trust laws against the Kayser and 13 other firms and individuals. The patent infringement trial took nearly 16 days and a verdict is expected to be rendered in about three months. The final days of the trial were devoted mostly to testimony offered by the plaintiffs, designed to show that weaving and knitting are entirely different and distinct processes. One of the main points emphasized by the defense was that the Kaufman patent covering the use of multiple carriers for the knitting of full-fashioned hosiery was invalid because of prior use in the weaving trade of a somewhat similar method designed to accomplish the same purpose, "dispersion" of raw silk unevenness. The Kaufman patent was issued August 7, 1934, and was followed by widespread adoption by full-fashioned hosiery manufacturers of the use of the three-carrier method of knitting to reduce streaks in the product.

REVIEW OF THE YARN MARKETS

Yarns In Less Active Demand Except Rayon. Shipments on Old Orders Good

Philadelphia, Pa., February 16, 1937

NEW BUSINESS in all types of yarns has been less active than during the last month last year with the exception of a continued call for rayon that is larger than producers can supply until their new additions begin production late this year or early next. Cotton yarns have been marking time so far as new contracts go but a fair volume has passed during the month to special trades such as insulating yarns to replace damages in flood sections. Prices of all types of yarns have changed little during the last month and in worsted some slight easing has occurred.

Cotton Spinners Busy on Old Orders

Although there has been a substantial decline in new business in cotton yarns so far this year compared with the excited buying that occurred during the latter months of 1936, the spinning industry continues to operate at a very active rate on old orders booked during that period. Indications are that spinners will continue on rush schedules for several months to come, even though new business continues sub-normal compared with the former rate. Aside from some minor hold-ups in shipments of yarns to manufacturers of automobile lining material, delayed by the General Motors strike, shipments to other trades are being made promptly and in many instances, especially in the knitting end, manufacturers are asking for earlier deliveries than called for in their contracts.

There has been little change in the raw material price level during the last month, this being a shade higher, and prices of yarns have remained unchanged from those of a month ago. As was true in the latter months of 1936, ply carded weaving yarns are the strongest of the entire list and prices of such counts are much higher relatively than the same yarns in single. For example, 34½ to 35 cents for 20s two-ply has been prevalent compared with 31½ cents for the same yarn in the single with the same disparity being apparent in other counts. Smaller demand for these yarns from the automotive trade during recent weeks has been largely offset by a larger inquiry from other trades, electrical companies, for example, placing much larger orders for delivery during the second half of the year as a result of damage to such materials in the flooded areas in the middle west. During the last few days the shipment of yarns to automobile lining weavers has expanded on news of the termination of the automobile strike and spinners anticipate that during the next few weeks record-breaking deliveries will be made from such firms.

There has been a small amount of selling by second-hands at slight price concessions where yarn jobbers have contracts with spinners placed at lower prices. In these cases such jobbers finding new business more difficult to obtain and at the same time receiving good sized shipments on such contracts, have made concessions of one-half cent in carded weaving yarns but these have not been sufficient to weaken the general market level. New business in knitting yarns has been relatively smaller than in weaving and price concessions have been more noticeable in single than in ply, it being possible to buy an underwear quality yarn at 29 cents for 10s single, whereas a month ago only average quality yarn was available at such price while in combed, spinners at a month ago were holding for 43 cents basis 30s single are now soliciting business at 42 cents and yarn for recent government underwear contracts was reported sold at even lower prices. Spinners point out in this connection that while asking-prices have declined somewhat during the last month, very little yarn has been actually sold higher than figures noted in recent contracts. In this connection, it is generally conceded that current yarn prices contain a very fair margin for spinners and one larger than they have been able to obtain for many years prior to the last few months.

Mercerized yarns are unchanged at 75 cents basis 60s two-ply ungassed and while new business has been very small, these producers are extremely active on old business. Mercerizers are so pressed for deliveries over the next few weeks that several have been compelled to buy combed yarns in the open market for the first time in years, even though they have their own spinning plants. Large shipments of such yarns are going to manufacturers of anklets, men's slacks and infants' hosiery, in which a record-breaking season is anticipated by the trade.

Shortage of Rayon Yarn Continues and New Business Active

When producers opened their books for the acceptance of April delivery orders early this month, most of the larger operators reported that they had sold the entire month's production within a couple of days. Demand for April shipments instead of showing a decline was larger than in any recent month. Prices were unchanged, which means that rayon yarns compared with other textile fibers, continue cheap and this is unquestionably an important factor in the present record-breaking demand for the synthetic fiber. Demand from all trades has been heavy but approximately 75 per cent of the output is being taken by manufacturers of woven goods and approximately 22 per cent by knit goods mills, with the balance going to miscellaneous consumers. This indicates that the man-made fiber is competing successfully with silk in woven goods, of which the largest consuming end is dress fabrics.

While producers feel that there has been some speculative buying by manufacturers who have sought to protect themselves against a yarn scarcity, most of the contracting has been to cover actual goods orders so that they believe the present market rests on a sound foundation. Stocks of yarn at the end of 1936 were more than 21,000,000 pounds under the similar 1935 date, this being one of the lowest figures ever recorded and only about a three-day supply in the viscose and cuprammonium division. Since the first of this year there has been a further decline in yarn holdings by producers so that new all-time records have been touched in this connection in the last few weeks.

Silk Prices Barely Steady.

After reaching a high mark for recent months, the middle of last month an easier trend has developed in the raw silk and buying of this commodity by hosiery and other manufacturers has been smaller. Much of the fluctuation in silk has been attributed to changes in the yen and some important trade interests which have been bullish for some time have turned bearish on account of the current exchange uncertainties. Other observers are inclined to take a calmer view of the situation, although it is recognized that since Japan needs foreign exchange badly, she may try to push her raw silk exports during the next few months. This would be quite logical since Japan is finding it more and more difficult to increase exports of manufactured goods. However, the truth is that Japan does not have much more silk to sell this season. Usually about 60 per cent of the crop is sold during the first half of the crop year from July through December. This year, however, about 75 to 80 per cent of the crop was already sold before the turn of the year. Under these circumstances, it would be poor policy for Japan to depress prices unduly by increased offerings. Total stocks of raw silk in Japan at the end of December were only 78,700 bales as compared with 114,200 bales at the end of 1935.

Worsted Yarns Less Active and Easier

Although spinners of weaving yarns are quoting prices unchanged compared with last month, there has been a reduction of 5 cents made in two-ply knitting counts. New business in weaving and knitting sections of the market has been very quiet during the month but satisfactory shipments on old contracts have been made to weavers while spinners of knitting numbers are having more difficulty.

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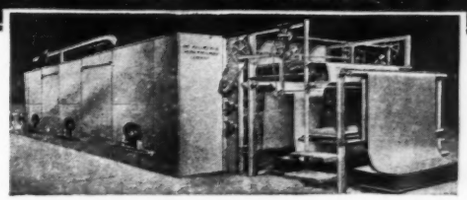

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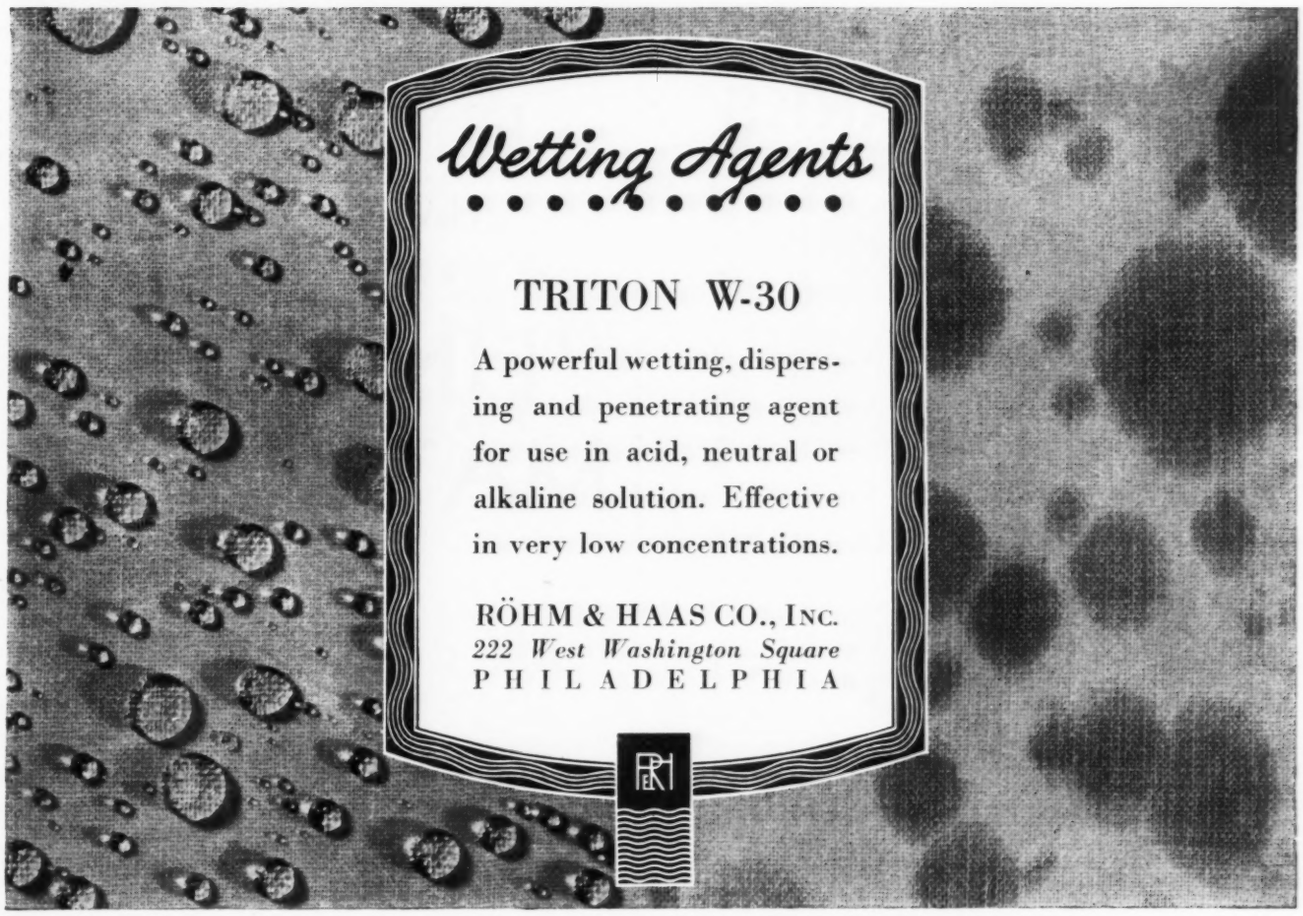
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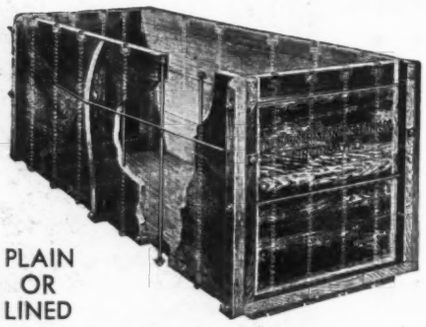

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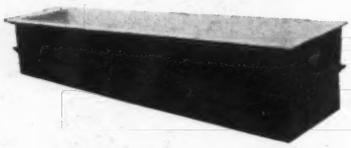

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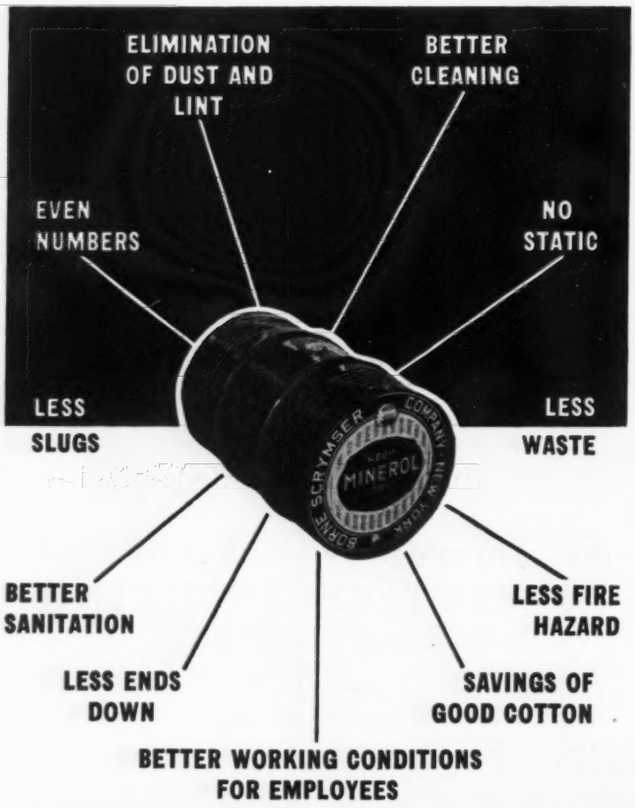

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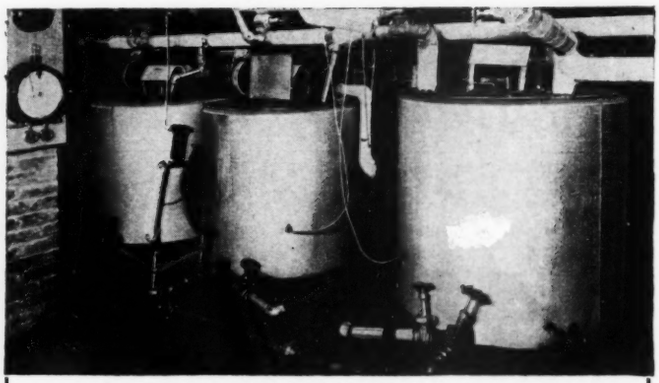

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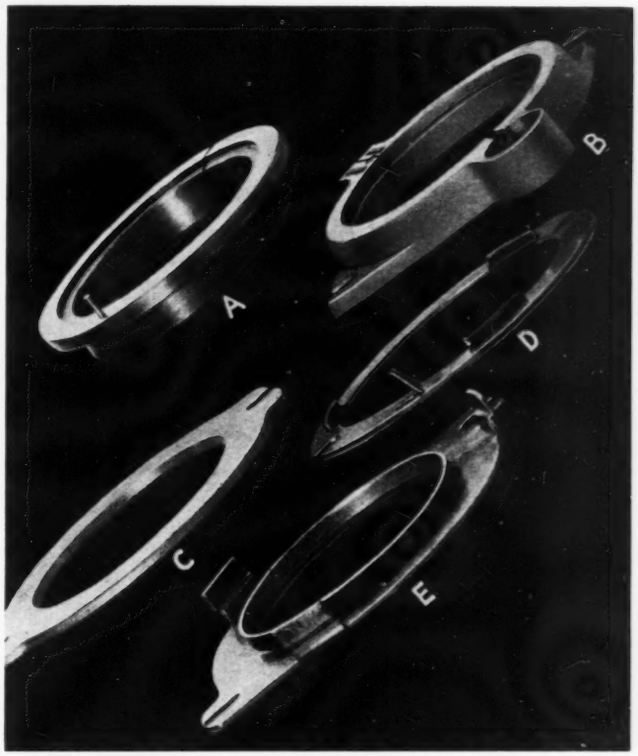

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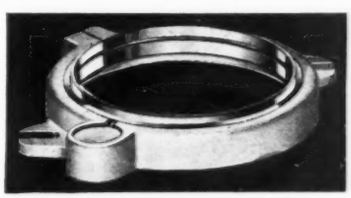

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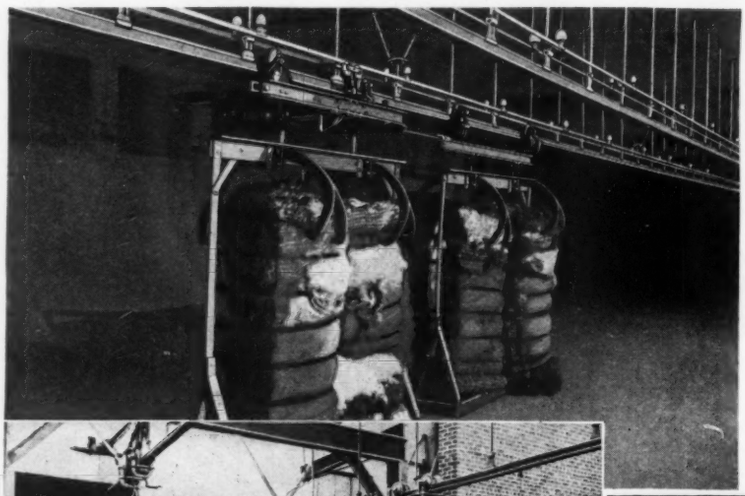

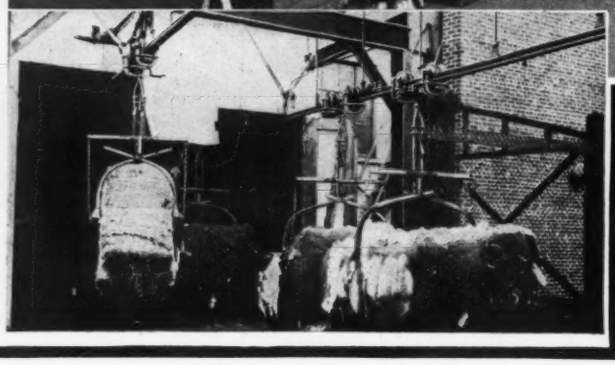

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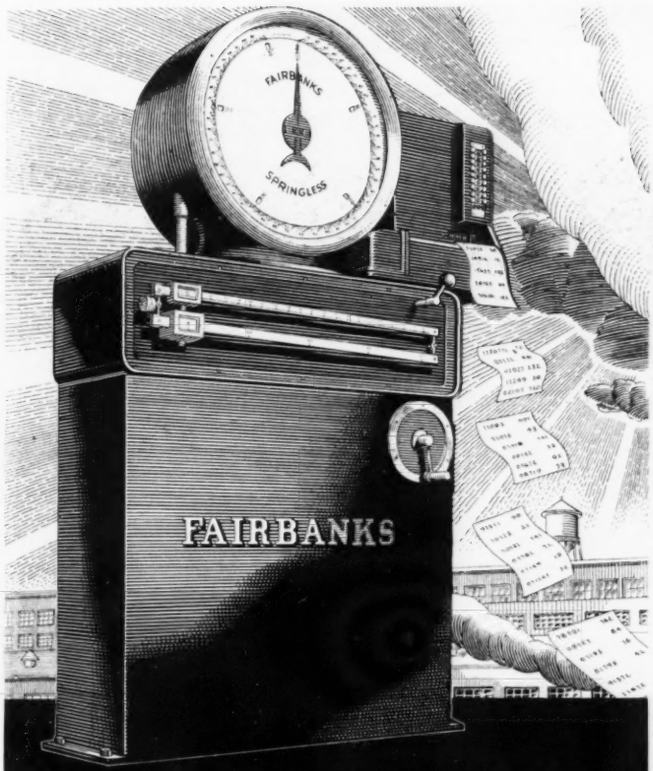

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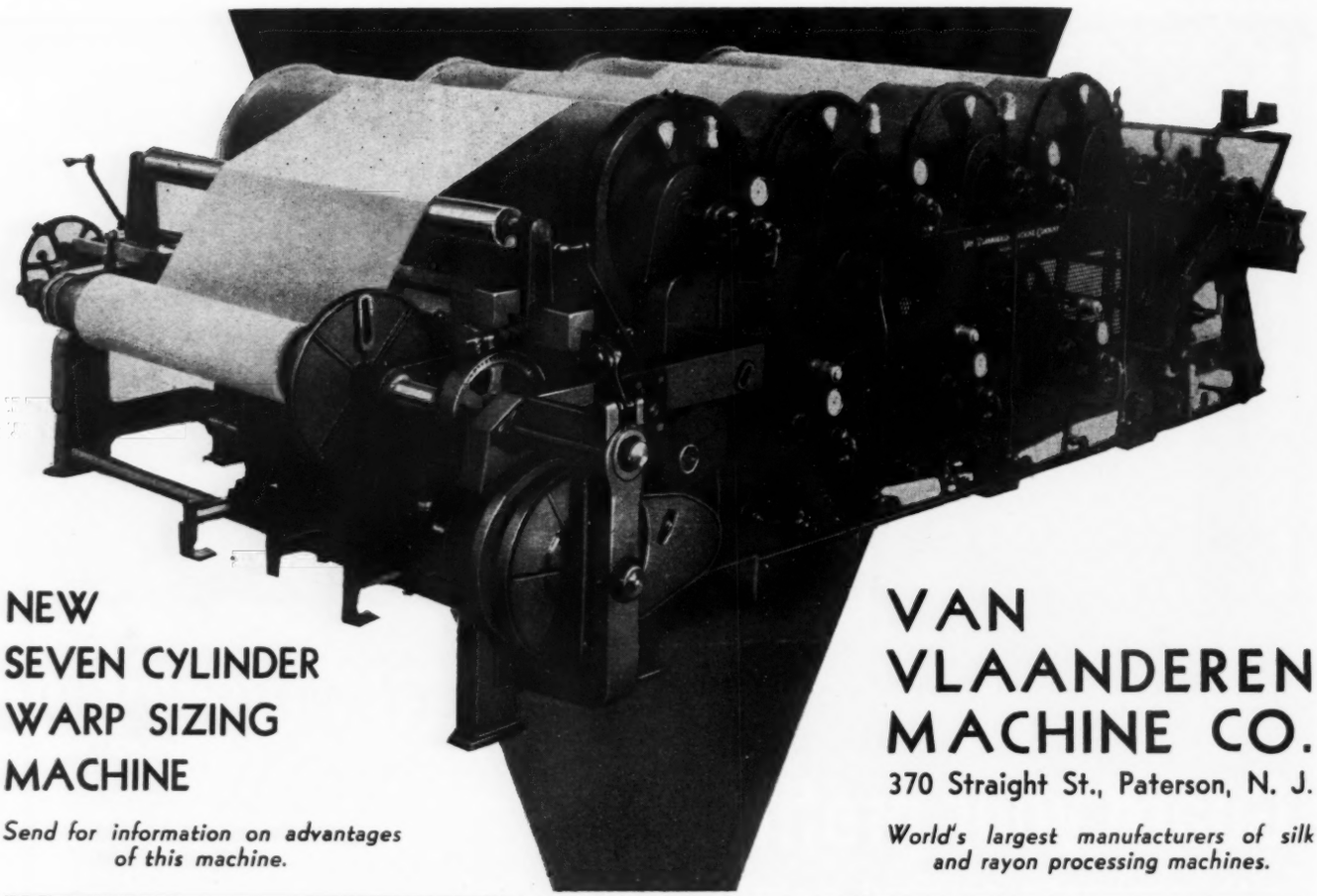

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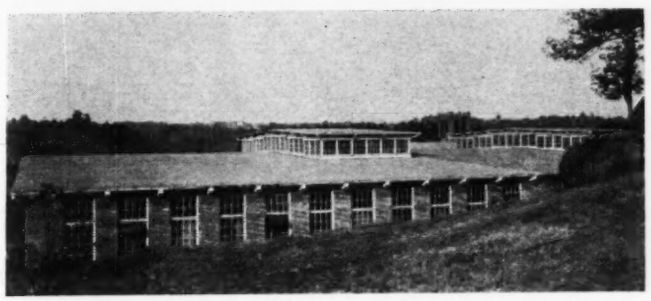

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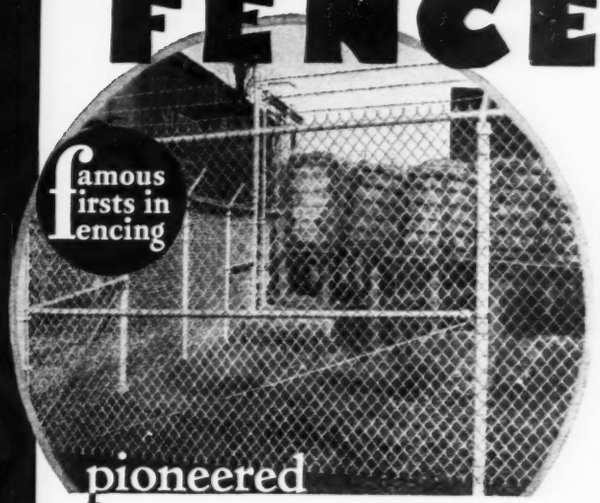

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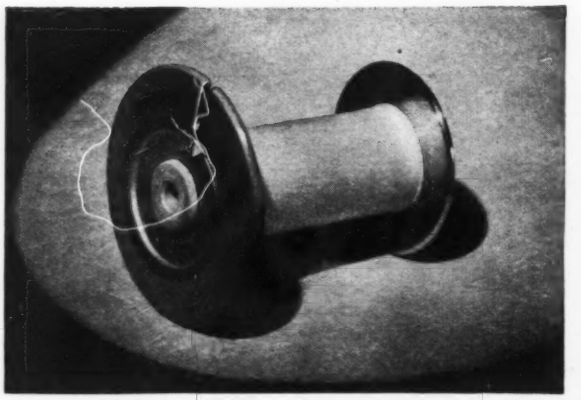

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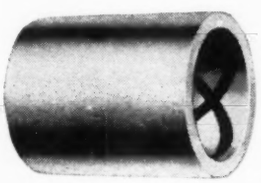

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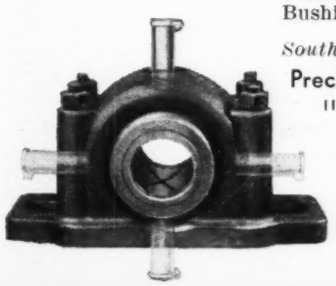

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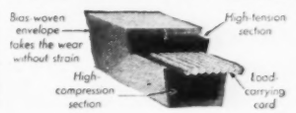

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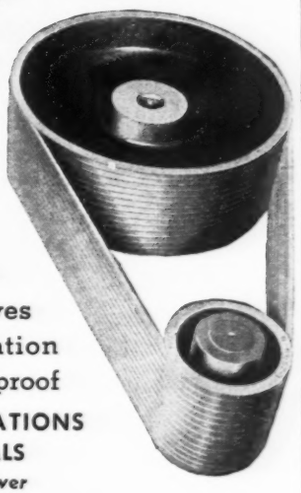

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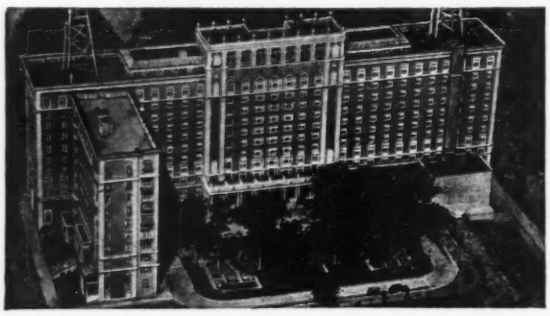

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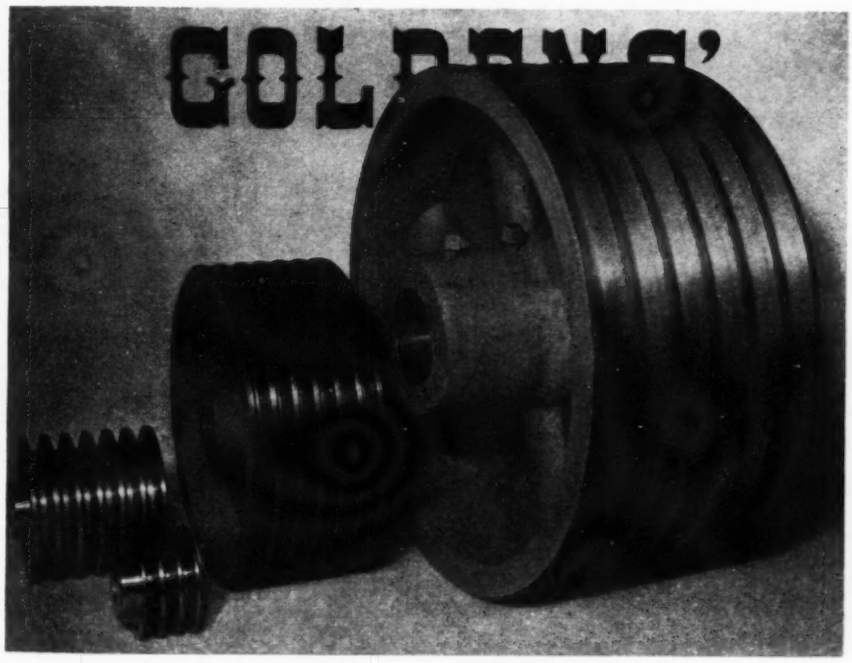

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Rayon, Spun Silk, Raw Silk
Wool—Worsted—Cotton
(Any form dyed or Undyed)
QUANTITY NO OBJECT
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COTTON, Grant Bldg., ATLANTA, GA.

Paul B. Eaton

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POMONA PUMP CO.

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Sales Offices: San Francisco, New York, Chicago, Los Angeles

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CORROSION RESISTANCE
in the
TEXTILE INDUSTRY

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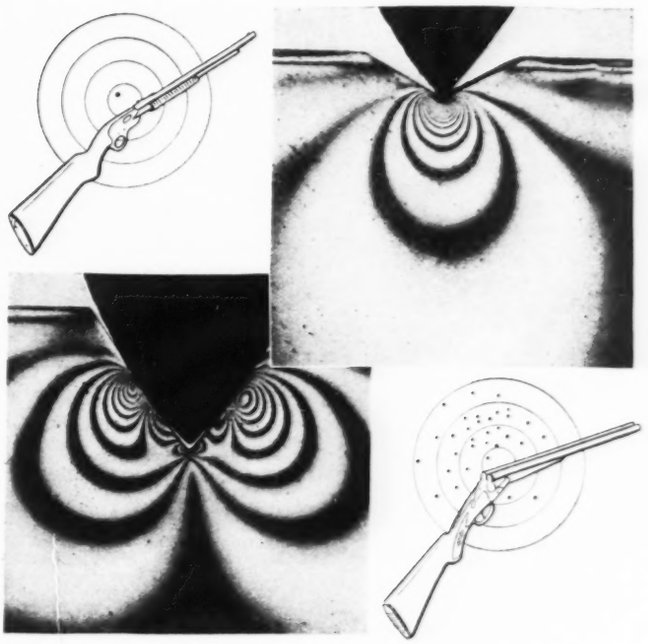
. . . so the 50 Type Picker lasts longer



X-Ray photos show why picker with shallow, inaccurate hole breaks down quickly . . . and why machine-bored hole saves the picker's life.

A picker hole inaccurately cut by hand takes the shock of the shuttle all at one point. Repeated blows cause the picker to weaken at that point.

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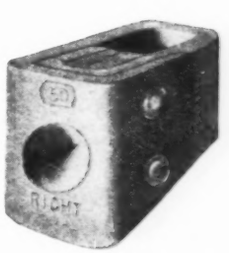
The Life Saver hole is a patented feature of the Graton & Knight 50 Type Picker. It makes the picker last twice as long . . . yet it costs no more. (Loom fixers prefer it—there's no cutting to do.)



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AN ISSUE OF SPECIAL IMPORTANCE

The May issue of COTTON will feature the Annual Convention of the American Cotton Manufacturers Association to be held at the Mayflower Hotel, Washington, D. C., May 12th-14th. It will give advance information on this important meeting and also will carry complete reports of the Southern Textile Exposition and Annual Knitting Arts Exhibition. Forms Close April 20th.

COTTON

(Serving the Textile Industries)

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